

Barb O'Brien

Access DB# \_\_\_\_\_

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Ritina L. Loh Examiner #: \_\_\_\_\_ Date: 7/8/02  
Art Unit: 1614 Phone Number 30 \_\_\_\_\_ Serial Number: 091868106  
Mail Box and Bldg/Room Location: CM1 2D01 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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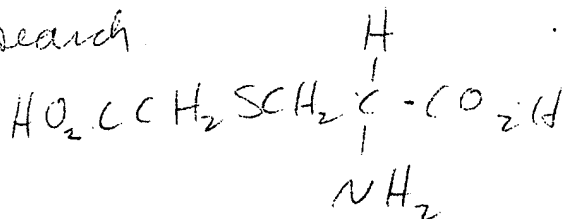
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Preventive for respiratory infectious diseases  
Inventors (please provide full names): Tsuyoshi Nagatake

Earliest Priority Filing Date: 12/22/98

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search



Thanks  
Release

Rush Search Approved  
Thomas K. Fage  
SPE, AU 1615

Point of Contact:  
Barb O'Brien  
Technical Information Specialist  
STIC CM1 6A05 308-4291

### STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>8013</u>	NA Sequence (#) _____	STN <u>339</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
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Date Completed: <u>7-9-02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>23</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>38</u>	Other _____	Other (specify) _____

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=> fil reg; d que 19

FILE 'REGISTRY' ENTERED AT 09:15:25 ON 09 JUL 2002

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STRUCTURE FILE UPDATES: 8 JUL 2002 HIGHEST RN 437701-77-4

DICTIONARY FILE UPDATES: 8 JUL 2002 HIGHEST RN 437701-77-4

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Calculated physical property data is now available. See HELP PROPERTIES  
for more information. See STNote 27, Searching Properties in the CAS  
Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

L4	72	SEA	FILE=REGISTRY	ABB=ON	C5H9NO4S/MF
L5	38	SEA	FILE=REGISTRY	ABB=ON	L4 NOT RSD/FA
L6	10	SEA	FILE=REGISTRY	ABB=ON	L5 AND (ALANINE OR CYSTEINE)
L7	7	SEA	FILE=REGISTRY	ABB=ON	L6 NOT (ESTER OR N CARBOXYMETHYL)
L9	6	SEA	FILE=REGISTRY	ABB=ON	L7 NOT (N METHOXYCARBONYL)

=> fil hcapl; d que 126; d que 131; s 126 or 131

FILE 'HCAPLUS' ENTERED AT 09:15:31 ON 09 JUL 2002

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FILE COVERS 1907 - 9 Jul 2002 VOL 137 ISS 2

FILE LAST UPDATED: 8 Jul 2002 (20020708/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

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check your SDI profiles to see if they need to be revised. For  
information on CAS roles, enter HELP ROLES at an arrow prompt or use  
the CAS Roles thesaurus (/RL field) in this file.

L4	72	SEA	FILE=REGISTRY	ABB=ON	C5H9NO4S/MF
L5	38	SEA	FILE=REGISTRY	ABB=ON	L4 NOT RSD/FA
L6	10	SEA	FILE=REGISTRY	ABB=ON	L5 AND (ALANINE OR CYSTEINE)
L7	7	SEA	FILE=REGISTRY	ABB=ON	L6 NOT (ESTER OR N CARBOXYMETHYL)
L9	6	SEA	FILE=REGISTRY	ABB=ON	L7 NOT (N METHOXYCARBONYL)

many references! used terms from inventor's work to narrow answer set

09/868106

Page 2

L17 545 SEA FILE=HCAPLUS ABB=ON L9  
L18 118750 SEA FILE=HCAPLUS ABB=ON RESPIRATORY TRACT+NT/CT  
L19 49 SEA FILE=HCAPLUS ABB=ON L17 AND L18  
L26 35 SEA FILE=HCAPLUS ABB=ON L19 NOT PY>1997

L4 72 SEA FILE=REGISTRY ABB=ON C5H9NO4S/MF  
L5 38 SEA FILE=REGISTRY ABB=ON L4 NOT RSD/FA  
L6 10 SEA FILE=REGISTRY ABB=ON L5 AND (ALANINE OR CYSTEINE)  
L7 7 SEA FILE=REGISTRY ABB=ON L6 NOT (ESTER OR N CARBOXYMETHYL)  
L9 6 SEA FILE=REGISTRY ABB=ON L7 NOT (N METHOXYCARBONYL)  
L17 545 SEA FILE=HCAPLUS ABB=ON L9  
L20 62 SEA FILE=HCAPLUS ABB=ON L17(L) (THU OR BAC OR PAC OR PKT OR - Roles  
DMA)/RL  
L27 228 SEA FILE=HCAPLUS ABB=ON L17 AND PHARMAC?/SC,SX  
L28 177 SEA FILE=HCAPLUS ABB=ON (L20 OR L27) NOT PY>1997  
L29 49 SEA FILE=HCAPLUS ABB=ON L28 AND P/DT - Patents as document type  
L31 26 SEA FILE=HCAPLUS ABB=ON L29 AND (INHALANT# OR EXPECTORANT# OR  
MUCOLY? OR ?SNORING?)

THU - Therapeutic use  
BAC - biological activity  
PAC - pharmacology  
PKT - pharmacokinetics  
DMA - drug mechanism of action

L32 56 L26 OR L31

=> fil medl; d que 146  
FILE 'MEDLINE' ENTERED AT 09:21:57 ON 09 JUL 2002

FILE LAST UPDATED: 7 JUL 2002 (20020707/UP). FILE COVERS 1958 TO DATE.

On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2002 vocabulary. Enter HELP THESAURUS for details.

THIS FILE CONTAINS CAS REGISTRY NUMBERS FOR EASY AND ACCURATE SUBSTANCE IDENTIFICATION.

L34 252 SEA FILE=MEDLINE ABB=ON CARBOCYSTEINE/CT  
L40 164518 SEA FILE=MEDLINE ABB=ON RESPIRATORY TRACT INFECTIONS+NT/CT  
L43 140 SEA FILE=MEDLINE ABB=ON L34(L) (TU OR PD OR PK OR AD)/CT  
L44 93 SEA FILE=MEDLINE ABB=ON L43/MAJ  
L45 28 SEA FILE=MEDLINE ABB=ON L44 AND L40  
L46 26 SEA FILE=MEDLINE ABB=ON L45 NOT PY>1997

Subheadings  
TU - therapeutic use  
PD - pharmacology  
PK - pharmacokinetics  
AD - administration & dosage

=> dup rem 146,132  
FILE 'MEDLINE' ENTERED AT 09:22:13 ON 09 JUL 2002

FILE 'HCAPLUS' ENTERED AT 09:22:13 ON 09 JUL 2002  
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PROCESSING COMPLETED FOR L32

L48 81 DUP REM L46 L32 (1 DUPLICATE REMOVED)  
ANSWERS '1-26' FROM FILE MEDLINE  
ANSWERS '27-81' FROM FILE HCAPLUS

=> d iall 1-26

L48 ANSWER 1 OF 81

MEDLINE

DUPLICATE 1

Searched by Barb O'Bryen, STIC 308-4291

ACCESSION NUMBER: 82202735 MEDLINE  
DOCUMENT NUMBER: 82202735 PubMed ID: 7080939  
TITLE: Effect of S-carboxymethylcysteine on the biophysical and biochemical properties of mucus in chronic bronchitics.  
AUTHOR: Cox A; Jabbal-Gill I; Marriott C; Davis S S  
SOURCE: ADVANCES IN EXPERIMENTAL MEDICINE AND BIOLOGY, (1982) 144 423-9.  
Journal code: 0121103. ISSN: 0065-2598.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198207  
ENTRY DATE: Entered STN: 19900317  
Last Updated on STN: 20000303  
Entered Medline: 19820708  
CONTROLLED TERM: Check Tags: Human  
\*Bronchitis: PP, physiopathology  
\*Carbocysteine: PD, pharmacology  
Chronic Disease  
\*Cysteine: AA, analogs & derivatives  
Double-Blind Method  
Glycoproteins: ME, metabolism  
\*Mucus: DE, drug effects  
Mucus: ME, metabolism  
Mucus: PH, physiology  
\*Sputum: DE, drug effects  
Sputum: PH, physiology  
Viscosity  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Glycoproteins)

L48 ANSWER 2 OF 81 MEDLINE  
ACCESSION NUMBER: 1998010724 MEDLINE  
DOCUMENT NUMBER: 98010724 PubMed ID: 9349882  
TITLE: Improvement of mucosal pathology of the sinuses after exposure to sulfur dioxide by nebulization of S-carboxymethylcysteine.  
AUTHOR: Sugiura Y; Ohashi Y; Nakai Y  
CORPORATE SOURCE: Department of Otolaryngology, Osaka City University Medical School, Japan.  
SOURCE: ACTA OTO-LARYNGOLOGICA. SUPPLEMENT, (1997) 531 10-6.  
Journal code: 0370355. ISSN: 0365-5237.  
PUB. COUNTRY: Norway  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199712  
ENTRY DATE: Entered STN: 19980109  
Last Updated on STN: 20000303  
Entered Medline: 19971209

## ABSTRACT:

Since s-carboxymethylcysteine (S-CMC) can directly enhance the ciliary activity in the maxillary sinus mucosa of patients with chronic sinusitis in the absence of significant organic changes of ciliated cells, the nebulization therapy using this medicine might be more effective in the treatment of chronic sinusitis than oral administration of the medicine. The safety of using 0.5-10% of S-SMC as a medicine for nebulization has been experimentally established. The present study was designed to experimentally examine the effectiveness of nebulization using 0.5-10% of S-CMC solution in the treatment of experimental chronic sinusitis in rabbits recurrently exposed to 20 ppm of sulfur dioxide. Thirty-three healthy rabbits were used; 3 of them were used as controls. The remaining 30 were exposed to 20 ppm of sulfur dioxide for 4 h a day for 4

successive weeks. Twelve animals were not treated with any medication during the post-exposure period, and sacrificed at 24 h or 15 days after completion of the final exposure to sulfur dioxide. The remaining 18 animals were treated with nebulization using 10%, 5% or 0.5% of S-CMC solution for 20 min a day for 14 successive days after the final exposure to sulfur dioxide, and they were sacrificed at 24 h after the final nebulization using S-CMC. At the time of sacrifice, the ciliary activity and the morphology of the sinus mucosa were observed to assess the effectiveness of S-CMC nebulization. In the animals sacrificed 24 h after the final exposure, the mucosa of the sinus demonstrated marked epithelial cell injuries, and the ciliary activity was extremely reduced. Complete recovery of the epithelium and the ciliary activity was not recognized in the animals sacrificed 15 days after completion of the exposure. By contrast, epithelial recovery was more accelerated in the animals treated with S-CMC nebulization during the 14 days after the exposure. In the animals treated with 0.5% of S-CMC, the ciliary activity was inferior to that of the control animals, and the epithelial repair was not complete. In the animals treated with 10% of S-CMC, however, ciliary activity and epithelial morphology were completely recovered. In conclusion, our study suggests that clinical application of 10% of S-CMC nebulization may provide otolaryngologists with a new tool in the treatment of sinus diseases such as chronic sinusitis.

CONTROLLED TERM: Check Tags: Animal  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
Cilia: UL, ultrastructure  
Epithelium: UL, ultrastructure  
Mucociliary Clearance: DE, drug effects  
Nasal Mucosa: PA, pathology  
Nasal Mucosa: UL, ultrastructure  
Nebulizers and Vaporizers  
Rabbits  
Sinusitis: CI, chemically induced  
\*Sinusitis: DT, drug therapy  
Sinusitis: PA, pathology  
Sinusitis: PP, physiopathology  
Sulfur Dioxide  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 7446-09-5 (Sulfur Dioxide)

L48 ANSWER 3 OF 81 MEDLINE  
ACCESSION NUMBER: 1998010723 MEDLINE  
DOCUMENT NUMBER: 98010723 PubMed ID: 9349881  
TITLE: Nebulization of S-carboxymethylcysteine does not adversely affect the mucociliary system in the paranasal sinus and trachea of the healthy rabbit.  
AUTHOR: Sugiura Y; Ohashi Y; Nakai Y  
CORPORATE SOURCE: Department of Otolaryngology, Osaka City University Medical School, Japan.  
SOURCE: ACTA OTO-LARYNGOLOGICA. SUPPLEMENT, (1997) 531 5-9.  
Journal code: 0370355. ISSN: 0365-5237.  
PUB. COUNTRY: Norway  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199712  
ENTRY DATE: Entered STN: 19980109  
Last Updated on STN: 20000303  
Entered Medline: 19971209

ABSTRACT:  
Chronic sinusitis is a persistent inflammatory impairment of the paranasal sinus. Disturbance of the mucociliary function in the paranasal sinus is the most common finding in chronic sinusitis. S-carboxymethylcysteine (S-CMC) has been shown to directly enhance the ciliary activity of the chronic sinusitis mucosa. Direct contact of the disturbed cilia with S-CMC may recover the

reduced beating activity of cilia in chronic sinusitis and the mucosal pathology of the disease can thus be improved. Before S-CMC as medicine for nebulization in the treatment of chronic sinusitis can be clinically applied, however, it should be experimentally established whether nebulization of S-CMC has any adverse effects on the mucociliary system of the respiratory mucosa. The present study was designed to experimentally examine the safety of nebulization of S-CMC especially with regard to the respiratory mucosa. Rabbits were treated with nebulization of three different concentrations of S-CMC solution for 20 min a day for 14 successive days, and their mucosal pathology of the sinus and trachea was examined and compared with that of healthy animals. Nebulization of concentrations of 0.5-10% of S-CMC solution did not affect the ciliary activity in the sinus and tracheal mucosa, nor did this treatment induce pathological changes such as epithelial injury and inflammatory cell accumulation. It is therefore concluded that concentrations of 0.5-10% S-CMC solution are quite safe for the use of nebulization in the treatment of chronic sinusitis.

CONTROLLED TERM: Check Tags: Animal  
\*Carbocysteine: AD, administration & dosage  
Carbocysteine: TU, therapeutic use  
Chronic Disease  
\*Mucociliary Clearance: DE, drug effects  
\*Nasal Mucosa: DE, drug effects  
Nasal Mucosa: PH, physiology  
Nasal Mucosa: UL, ultrastructure  
Nebulizers and Vaporizers  
\*Paranasal Sinuses: DE, drug effects  
Paranasal Sinuses: PH, physiology  
Paranasal Sinuses: UL, ultrastructure  
Rabbits  
Sinusitis: DT, drug therapy  
Sinusitis: PP, physiopathology  
\*Trachea: DE, drug effects  
Trachea: PH, physiology  
Trachea: UL, ultrastructure  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine)

L48 ANSWER 4 OF 81 MEDLINE  
ACCESSION NUMBER: 93273289 MEDLINE  
DOCUMENT NUMBER: 93273289 PubMed ID: 8500784  
TITLE: Carbocisteine improves the mucociliary transport rate in rats with SO<sub>2</sub>-induced bronchitis.  
AUTHOR: Zahm J M; Levrier J; Duval D; Pierrot D; Puchelle E  
CORPORATE SOURCE: INSERM U 314, CHR Maison Blanche, Reims, France.  
SOURCE: FUNDAMENTAL AND CLINICAL PHARMACOLOGY, (1993) 7 (3-4) 155-60.  
Journal code: 8710411. ISSN: 0767-3981.  
PUB. COUNTRY: France  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199306  
ENTRY DATE: Entered STN: 19930716  
Last Updated on STN: 19930716  
Entered Medline: 19930630

**ABSTRACT:**

In order to study the effect of carbocisteine on the mucociliary function of the respiratory tract, we performed a double-blind study on rats with SO<sub>2</sub>-induced (400 ppm) hypersecretion. During the experimental bronchitis, the treated group of rats received carbocisteine through a stomach tube at a dose level of 500 mg/kg for 15 days, whereas the untreated group of rats received distilled water. After killing the rats, and following lung excision, the respiratory mucus was scraped off and collected by using a glass capillary. The

mucus degree of purulence was macroscopically estimated and the mucus transport rate was measured by using the frog palate technique. The mean mucus relative transport rate, measured on the frog palate, was 0.60 +/- 0.17 in the untreated group and was significantly higher ( $P < 0.01$ ) in the treated group (0.73 +/- 0.14). Carbocysteine also significantly altered ( $P < 0.01$ ) the mucus macroscopical aspect, leading to a decrease in the number of rats with purulent mucus. These results suggest that carbocysteine maintains an efficient mucus transport rate, leading to a less infected respiratory tract.

CONTROLLED TERM: Check Tags: Animal; Male  
\*Bronchitis: PP, physiopathology  
\*Carbocysteine: PD, pharmacology  
Double-Blind Method  
Microscopy, Electron  
\*Mucociliary Clearance: DE, drug effects  
Mucous Membrane: UL, ultrastructure  
Mucus: ME, metabolism  
Rats  
Rats, Sprague-Dawley  
Respiratory System: UL, ultrastructure  
Sulfur Dioxide  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 7446-09-5 (Sulfur Dioxide)

L48 ANSWER 5 OF 81 MEDLINE  
ACCESSION NUMBER: 94078090 MEDLINE  
DOCUMENT NUMBER: 94078090 PubMed ID: 8256077  
TITLE: Effect of S-carboxymethylcysteine on ciliary activity in chronic sinusitis.  
AUTHOR: Ohashi Y; Nakai Y; Sugiura Y; Ohno Y; Okamoto H; Hayashi M  
CORPORATE SOURCE: Department of Otolaryngology, Osaka City University Medical School, Japan.  
SOURCE: RHINOLOGY, (1993 Sep) 31 (3) 107-11.  
Journal code: 0347242. ISSN: 0300-0729.  
PUB. COUNTRY: Netherlands  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199401  
ENTRY DATE: Entered STN: 19940203  
Last Updated on STN: 19940203  
Entered Medline: 19940111

## ABSTRACT:

This study was designed to investigate the possible pharmacological effect of S-carboxy-methylcysteine (S-CMC) on the ciliary activity, using an in vitro experimental system after removing mucus. Ciliary activity from healthy rabbit maxillary sinus and from healthy human nasal mucosa demonstrated no significant change in RPMI 1640 containing S-CMC. On the other hand, the effect of S-CMC on the reduced ciliary activity from patients with chronic sinusitis was quite varied among the cases examined. S-CMC demonstrated no stimulatory effect on the beating activity of cilia that have a baseline activity of less than 400 beats/min. However, S-CMC was able to enhance the beating activity of cilia that demonstrated a baseline activity of more than 400 beats/min. S-CMC at 0.5% induced a larger ciliostimulatory effect than 0.05% S-CMC. In conclusion, our study has clearly demonstrated that S-CMC could directly enhance ciliary activity of chronic sinusitis in the absence of significant organic change of ciliated cells.

CONTROLLED TERM: Check Tags: Animal; Human; In Vitro  
\*Carbocysteine: PD, pharmacology  
Chronic Disease  
Cilia: DE, drug effects  
Cilia: PH, physiology  
Maxillary Sinus: DE, drug effects



\*Maxillary Sinus: PP, physiopathology  
\*Maxillary Sinusitis: PP, physiopathology  
Nasal Mucosa: PH, physiology  
Rabbits

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine)

L48 ANSWER 6 OF 81 MEDLINE  
ACCESSION NUMBER: 93008414 MEDLINE  
DOCUMENT NUMBER: 93008414 PubMed ID: 1394568  
TITLE: [Carbocysteine in the treatment of recurrent bronchitis in infants].  
Karbocystein v liecbe recidivujucich bronchitid u dojciat.  
AUTHOR: Banovcin P; Jakusova L; Rosslerova V; Miklerova M; Pullmann R  
CORPORATE SOURCE: Detska klinika Jeseniovej lekarskej fakulty Univerzity Komenskeho, Martin.  
SOURCE: CESKOSLOVENSKA PEDIATRIE, (1992 Sep) 47 (9) 543-6.  
Journal code: 0403576. ISSN: 0069-2328.  
PUB. COUNTRY: Czechoslovakia  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Slovak  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199211  
ENTRY DATE: Entered STN: 19930122  
Last Updated on STN: 19930122  
Entered Medline: 19921125

ABSTRACT:

In a group of 51 children aged 6-24 months the therapeutic effectiveness of the mucolytic preparation carbocysteine was tested and compared with the effect of Ipeca syrup. The effect was evaluated by means of a point score comprising changes of the clinical picture of the disease and the use of other laboratory examinations. The results of the examination revealed the more favourable effect of carbocysteine, as compared with a mixture of Ipeca syrup in the treatment of acute relapsing bronchitis in infants.

CONTROLLED TERM: Check Tags: Female; Human; Male  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Child, Preschool  
English Abstract  
Infant  
Recurrence

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine)

L48 ANSWER 7 OF 81 MEDLINE  
ACCESSION NUMBER: 93138542 MEDLINE  
DOCUMENT NUMBER: 93138542 PubMed ID: 1487227  
TITLE: Study on the effect of oral administration of carbocysteine on ventilatory parameters in the SO2 inhalation model of bronchitis in the rat.  
AUTHOR: Levrier J; Duval D; Lloyd K G  
CORPORATE SOURCE: Synthelabo Recherche, (LERS) Biology Department, Bagneux, France.  
SOURCE: FUNDAMENTAL AND CLINICAL PHARMACOLOGY, (1992) 6 (6) 231-6.  
Journal code: 8710411. ISSN: 0767-3981.  
PUB. COUNTRY: France  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199302  
ENTRY DATE: Entered STN: 19930312  
Last Updated on STN: 19930312  
Entered Medline: 19930224

## ABSTRACT:

In order to study the physiological correlates of the beneficial action of carbocysteine (S-carboxy-methyl-cysteine), we have measured the changes occurring in ventilatory parameters in rats made bronchitic by prolonged exposure (2 weeks) to air containing sulfur dioxide (SO<sub>2</sub>). In animals treated with distilled water (1 ml/100 g/day), statistically significant ( $P < 0.05$ ) changes in respiratory frequency (-20%) and tidal volume (+31%) were found. As a result of these opposing changes, the ventilation/min was stable. Moreover, the compliance was decreased (33%,  $P < 0.05$ ) and the resistance was greatly enhanced (+ 99%,  $P < 0.05$ ). The concomitant administration of carbocysteine (500 mg/kg po/day) with SO<sub>2</sub> inhalation significantly ( $P < 0.05$ ) prevented the development of resistance without effecting significant changes in the other parameters except for a slight improvement in ventilation/min. In conclusion, this improved respiratory resistance in the bronchitic carbocysteine-treated animals tallies with a decrease in mucus retention associated with the return to normal of rheological characteristics of the secreted mucus.

## CONTROLLED TERM:

Check Tags: Animal; Male  
Administration, Inhalation  
Administration, Oral  
  Bronchitis: CI, chemically induced  
  \*Bronchitis: DT, drug therapy  
  Bronchitis: PP, physiopathology  
  \*Carbocysteine: TU, therapeutic use  
Disease Models, Animal  
Lung: DE, drug effects  
Random Allocation  
Rats  
Rats, Sprague-Dawley  
\*Respiration: DE, drug effects  
Respiration: PH, physiology  
Respiratory Function Tests  
Sulfur Dioxide  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 7446-09-5 (Sulfur Dioxide)

L48 ANSWER 8 OF 81

MEDLINE

ACCESSION NUMBER: 92210058 MEDLINE  
DOCUMENT NUMBER: 92210058 PubMed ID: 1555809  
TITLE: Effects of S-carboxymethyl-L-cysteine on pulmonary sialyl transferase activity in vitro, in healthy and in sulphur-dioxide-induced bronchitic rats.  
AUTHOR: Berry C N; Lloyd K G; Louisot P  
CORPORATE SOURCE: Synthelabo Recherche (LERS), Bagneux, France.  
SOURCE: FUNDAMENTAL AND CLINICAL PHARMACOLOGY, (1992) 6 (1) 29-35.  
Journal code: 8710411. ISSN: 0767-3981.  
PUB. COUNTRY: France  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199205  
ENTRY DATE: Entered STN: 19920515  
Last Updated on STN: 19980206  
Entered Medline: 19920501

## ABSTRACT:

S-carboxymethyl-L-cysteine (carbocysteine) improves the visco-elastic properties of bronchial mucus in vivo, possibly as a result of an increase in the relative proportions of sialomucins in bronchial mucus. Carbocysteine was therefore studied in vitro and ex vivo in both normal and bronchitic rats on pulmonary sialyl transferase, responsible for the addition of sialic acid to mucus glycoproteins. Bronchitis was induced in male Sprague-Dawley rats by repeated exposure to sulphur dioxide for two weeks. During this time they received either 500 mg kg<sup>-1</sup> day<sup>-1</sup> carbocysteine or its vehicle by the oral route. Rats not being exposed to SO<sub>2</sub> received the same treatment. The animals

were then killed, and subcellular fractions prepared by differential centrifugation of lung homogenates. Sialyl transferase was assayed using CMP-14C sialic acid as substrate and desialysed fetuin as exogenous acceptor. Enzyme activity was located in both the (Golgi-containing) 10,000 g and 100,000 g pellets with minor activity in the cytosolic supernatants. When tested in vitro between  $10^{-6}$  and  $10^{-3}$  M, carbocysteine had no effect on sialyl transferase activity in microsomes taken from healthy or bronchitis rats. Repeated administration of carbocysteine was without effect on the sialyl transferase activity in 10,000 g pellets taken from healthy rats. However, in bronchitic rats there was a small but statistically significant ( $P$  less than 0.05) increase in enzymic activity in the treated group compared to the animals receiving the vehicle. There was no difference in the activity of the microsomal enzyme compared to vehicle-treated controls in either healthy or bronchitic rats. We conclude that it is possible that an increase in sialyl transferase activity in a Golgi-containing fraction of bronchitic lungs could explain the relative increase in sialomucins in bronchitic subjects.

CONTROLLED TERM: Check Tags: Animal; Male  
Bronchitis: CI, chemically induced  
\*Bronchitis: EN, enzymology  
Carbocysteine: AD, administration & dosage  
\*Carbocysteine: PD, pharmacology  
\*Lung: EN, enzymology  
Rats  
Rats, Inbred Strains  
\*Sialyltransferases: AN, analysis  
Subcellular Fractions: EN, enzymology  
Sulfur Dioxide  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 7446-09-5 (Sulfur Dioxide)  
CHEMICAL NAME: EC 2.4.99.- (Sialyltransferases)

L48 ANSWER 9 OF 81 MEDLINE  
ACCESSION NUMBER: 91288942 MEDLINE  
DOCUMENT NUMBER: 91288942 PubMed ID: 2099568  
TITLE: Long-lasting effects on rheology and clearance of bronchial mucus after short-term administration of high doses of carbocysteine-lysine to patients with chronic bronchitis.  
AUTHOR: Braga P C; Allegra L; Rampoldi C; Ornaghi A; Beghi G  
CORPORATE SOURCE: Center for Respiratory Pharmacology, School of Medicine, University of Milan, Italy.  
SOURCE: RESPIRATION, (1990) 57 (6) 353-8.  
Journal code: 0137356. ISSN: 0025-7931.  
PUB. COUNTRY: Switzerland  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199108  
ENTRY DATE: Entered STN: 19910825  
Last Updated on STN: 19960129  
Entered Medline: 19910805

**ABSTRACT:**

The rheological behavior and clearance of bronchial mucus samples collected by protected expectoration from 24 out-patients with simple chronic bronchitis were investigated before, at the end of a short period of treatment (4 days) with a single oral dose of 2.7 g (sachet) of carbocysteine-lysine (evening meal), and on the 4th and 8th days after the end of treatment versus placebo. In the group treated with carbocysteine-lysine, there were significant reductions in viscosity (-67, -48, -62%) and increases in mucociliary transport (+41, +31, +34%) at the three times mentioned. The most striking finding was that the improvements were still present 8 days after cessation of treatment. The elasticity parameter was not affected in any statistically significant way

(-10, -24, +65%). These findings suggest the presence of some type of 'post-mucoactive' effect.

CONTROLLED TERM: Check Tags: Female; Human; Male  
Adult  
Aged  
\*Bronchitis: ME, metabolism  
\*Carbocysteine: PK, pharmacokinetics  
Chronic Disease  
Middle Age  
Mucociliary Clearance  
\*Mucus: ME, metabolism  
Random Allocation  
Rheology  
Viscosity

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine)

L48 ANSWER 10 OF 81 MEDLINE  
ACCESSION NUMBER: 91315222 MEDLINE  
DOCUMENT NUMBER: 91315222 PubMed ID: 3155012  
TITLE: [Carbocysteine-sobrerol combination and exacerbation of chronic bronchitis].  
Associazione carbocisteina-sobrerolo e riacutizzazioni della bronchite cronica.  
Pasturenzi L; Donnetta A M; Gualtieri G; Luisetti M  
ARCHIVIO MONALDI PER LE MALATTIE DEL TORACE, (1988 Nov-Dec) 43 (6) 487-505. Ref: 45  
Journal code: 8902999. ISSN: 1120-0391.

AUTHOR: PASTURENZI L; DONNETTA A M; GUALTIERI G; LUISETTI M  
SOURCE: ARCHIVIO MONALDI PER LE MALATTIE DEL TORACE, (1988 Nov-Dec) 43 (6) 487-505. Ref: 45  
Journal code: 8902999. ISSN: 1120-0391.

PUB. COUNTRY: Italy  
DOCUMENT TYPE: (CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)

LANGUAGE: Italian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199108  
ENTRY DATE: Entered STN: 19910913  
Last Updated on STN: 19910913  
Entered Medline: 19910829

CONTROLLED TERM: Check Tags: Comparative Study; Human  
Ambroxol: TU, therapeutic use  
Amoxicillin: AD, administration & dosage  
Amoxicillin: TU, therapeutic use  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: AD, administration & dosage  
Cefuroxime: AD, administration & dosage  
Cefuroxime: TU, therapeutic use  
Chronic Disease  
Drug Therapy, Combination  
English Abstract  
\*Expectorants: AD, administration & dosage  
\*Terpenes: AD, administration & dosage  
Time Factors

CAS REGISTRY NO.: 18683-91-5 (Ambroxol); 2387-59-9 (Carbocysteine);  
26787-78-0 (Amoxicillin); 498-71-5 (sobrerol); 55268-75-2 (Cefuroxime)

CHEMICAL NAME: 0 (Expectorants); 0 (Terpenes)

L48 ANSWER 11 OF 81 MEDLINE  
ACCESSION NUMBER: 89100485 MEDLINE  
DOCUMENT NUMBER: 89100485 PubMed ID: 3062806  
TITLE: [Comparative evaluation of the effectiveness of lasolvan and mucodine in chronic nonspecific lung diseases].

Sravnitel'naia otsenka effektivnosti lasol'vana i mukodina pri khronicheskikh nespetsificheskikh zabolevaniiaakh legkikh.

AUTHOR: Solopov V N; Kolganova N A  
SOURCE: SOVETSKAIA MEDITSINA, (1988) (5) 69-72.  
Journal code: 0404525. ISSN: 0038-5077.  
PUB. COUNTRY: USSR  
DOCUMENT TYPE: (CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Russian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198902  
ENTRY DATE: Entered STN: 19900308  
Last Updated on STN: 20000303  
Entered Medline: 19890222  
CONTROLLED TERM: Check Tags: Comparative Study; Human  
\*Ambroxol: TU, therapeutic use  
\*Asthma: DT, drug therapy  
\*Bromhexine: AA, analogs & derivatives  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
CAS REGISTRY NO.: 18683-91-5 (Ambroxol); 2387-59-9 (Carbocysteine); 3572-43-8 (Bromhexine); 52-90-4 (Cysteine)

L48 ANSWER 12 OF 81 MEDLINE  
ACCESSION NUMBER: 86062057 MEDLINE  
DOCUMENT NUMBER: 86062057 PubMed ID: 4067726  
TITLE: Effects of carbocysteine on experimental chronic sinusitis caused by long-term exposure to SO2.  
AUTHOR: Ohashi Y; Nakai Y; Koshimo H; Ikeoka H; Maruoka K; Takagi K  
SOURCE: NIPPON JIBIINKOKA GAKKAI KAIHO [JOURNAL OF THE OTO-RHINO-LARYNGOLOGICAL SOCIETY OF JAPAN], (1985 Aug) 88 (8) 1056-60.  
Journal code: 7505728. ISSN: 0030-6622.  
PUB. COUNTRY: Japan  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Japanese  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198601  
ENTRY DATE: Entered STN: 19900321  
Last Updated on STN: 20000303  
Entered Medline: 19860114  
CONTROLLED TERM: Check Tags: Animal  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
\*Cysteine: AA, analogs & derivatives  
English Abstract  
\*Maxillary Sinus: UL, ultrastructure  
Microscopy, Electron  
Rabbits  
Sinusitis: CI, chemically induced  
\*Sinusitis: PA, pathology  
\*Sulfur Dioxide: TO, toxicity  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine); 7446-09-5 (Sulfur Dioxide)

L48 ANSWER 13 OF 81 MEDLINE  
ACCESSION NUMBER: 86077525 MEDLINE  
DOCUMENT NUMBER: 86077525 PubMed ID: 3907681  
TITLE: Long-term oral carbocisteine therapy in patients with

chronic bronchitis. A double blind trial with placebo control.

AUTHOR: Grillage M; Barnard-Jones K  
SOURCE: BRITISH JOURNAL OF CLINICAL PRACTICE, (1985 Oct) 39 (10) 395-8.  
Journal code: 0372546. ISSN: 0007-0947.

PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198602  
ENTRY DATE: Entered STN: 19900321  
Last Updated on STN: 20000303  
Entered Medline: 19860212

CONTROLLED TERM: Check Tags: Human  
Adult  
\*Bronchitis: DT, drug therapy  
Bronchitis: PP, physiopathology  
Carbocysteine: AE, adverse effects  
\*Carbocysteine: TU, therapeutic use  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Double-Blind Method  
Peak Expiratory Flow Rate

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

L48 ANSWER 14 OF 81 MEDLINE  
ACCESSION NUMBER: 85305322 MEDLINE  
DOCUMENT NUMBER: 85305322 PubMed ID: 4037622  
TITLE: [Changes in IgA levels in nasal mucus after upper respiratory tract diseases in infants treated with carbocysteine].  
Modifications du taux des IgA du mucus nasal au decours des affections des voies aeriennes superieures du nourrisson traitees par la carbocisteine.  
Henocq A; Moreau C; Mallet E; Sauger F; de Menibus C H  
ANNALES D OTO-LARYNGOLOGIE ET DE CHIRURGIE CERVICO-FACIALE, (1985) 102 (5) 373-5.  
Journal code: 9431026. ISSN: 0003-438X.

AUTHOR: France  
SOURCE: Journal; Article; (JOURNAL ARTICLE)

PUB. COUNTRY: French  
DOCUMENT TYPE: Priority Journals  
LANGUAGE: French  
FILE SEGMENT: 198510  
ENTRY MONTH: Entered STN: 19900320  
ENTRY DATE: Last Updated on STN: 20000303  
Entered Medline: 19851007

ABSTRACT: The authors have studied IgA level in nasal mucus of children, either not treated-controls, or treated with carbocysteine. All had common rhinobronchial diseases. They have noted a significant increase in IgA level in the treated group, from the 7th day.

CONTROLLED TERM: Check Tags: Human  
\*Carbocysteine: TU, therapeutic use  
Child, Preschool  
\*Cysteine: AA, analogs & derivatives  
English Abstract  
\*Immunoglobulin A, Secretory: AN, analysis  
Infant  
\*Nasal Mucosa: IM, immunology

**\*Respiratory Tract Infections: DT, drug therapy**  
**Respiratory Tract Infections: IM, immunology**  
Time Factors

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Immunoglobulin A, Secretory)

L48 ANSWER 15 OF 81 MEDLINE  
ACCESSION NUMBER: 86058159 MEDLINE  
DOCUMENT NUMBER: 86058159 PubMed ID: 4066083  
TITLE: Comparison between penetration of amoxicillin combined with carbocysteine and amoxicillin alone in pathological bronchial secretions and pulmonary tissue.  
AUTHOR: Braga P C; Scaglione F; Scarpazza G; Fraticelli G; Roviato G; Varoli F; Mariani C; Falchi M; Fraschini F  
SOURCE: INTERNATIONAL JOURNAL OF CLINICAL PHARMACOLOGY RESEARCH, (1985) 5 (5) 331-40.  
Journal code: 8110183. ISSN: 0251-1649.  
PUB. COUNTRY: Switzerland  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198601  
ENTRY DATE: Entered STN: 19900321  
Last Updated on STN: 20000303  
Entered Medline: 19860108

**ABSTRACT:**

Patients with chronic bronchitis were treated orally with either amoxicillin (500 mg) alone or in combination with carbocysteine (150 mg), thrice daily for five days, in order to assess whether the combination allows higher antibiotic levels to be obtained in bronchial mucus than those obtained from amoxicillin alone. Serum and mucus levels were determined for each patient at first and fifth day of the two drug regimens. The levels of amoxicillin in the lung tissue collected in patients undergoing pulmonary surgery were also determined after a single oral dose of amoxicillin (1 g) or of amoxicillin (1 g) plus carbocysteine (300 mg). In the bronchial secretions, at the same plasma concentrations, amoxicillin levels were statistically higher after administration of combined substances. These findings indicate the presence of a pharmacokinetic synergism between these compounds, which allows amoxicillin to penetrate more easily through the hemato-bronchial barrier. The association of amoxicillin and carbocysteine, determining an increase of the quantitative levels of antibiotic in the bronchial secretion (also if it is purulent), performs a sterilizing action in a short time with significant therapeutic advantages.

CONTROLLED TERM: Check Tags: Female; Human; Male  
Aged  
Amoxicillin: AD, administration & dosage  
\*Amoxicillin: TU, therapeutic use  
Bronchi: BS, blood supply  
\*Bronchi: SE, secretion  
\*Bronchitis: DT, drug therapy  
Bronchitis: MI, microbiology  
Bronchitis: PA, pathology  
Carbocysteine: AD, administration & dosage  
\*Carbocysteine: TU, therapeutic use  
\*Cysteine: AA, analogs & derivatives  
Drug Interactions  
Drug Therapy, Combination  
\*Lung: PA, pathology  
Middle Age  
Mucus: SE, secretion  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 26787-78-0 (Amoxicillin); 52-90-4 (Cysteine)

L48 ANSWER 16 OF 81 MEDLINE  
ACCESSION NUMBER: 86268238 MEDLINE  
DOCUMENT NUMBER: 86268238 PubMed ID: 3836611  
TITLE: [Effect of S-carboxymethylcysteine on the concentration of antibiotics in bronchial secretions and its therapeutic effects].  
Studio dell'attivita della S-carbossimetilcisteina sulle concentrazioni di antibiotici nel secreto bronchiale ed effetti terapeutici.  
AUTHOR: Pirali F; Ravizzola G; Santus G; Inzoli M R; Turano A  
SOURCE: ARCHIVIO MONALDI PER LA FISILOGIA E LE MALATTIE DELL APPARATO RESPIRATORIO, (1985 Jan-Apr) 40 (1-2) 3-18.  
Journal code: 1263173. ISSN: 0004-0185.  
PUB. COUNTRY: Italy  
DOCUMENT TYPE: (CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
(RANDOMIZED CONTROLLED TRIAL)  
LANGUAGE: Italian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198608  
ENTRY DATE: Entered STN: 19900321  
Last Updated on STN: 20000303  
Entered Medline: 19860821  
CONTROLLED TERM: Check Tags: Female; Human; Male  
Aged  
Antibiotics: ME, metabolism  
Bronchopneumonia: DT, drug therapy  
\*Bronchopneumonia: ME, metabolism  
\*Carbocysteine: PD, pharmacology  
\*Cysteine: AA, analogs & derivatives  
Drug Therapy, Combination  
English Abstract  
Middle Age  
Sputum: ME, metabolism  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Antibiotics)

L48 ANSWER 17 OF 81 MEDLINE  
ACCESSION NUMBER: 81272536 MEDLINE  
DOCUMENT NUMBER: 81272536 PubMed ID: 7022385  
TITLE: [Mucodine in the treatment of chronic bronchitis].  
Zastosowanie mukodyny w leczeniu przewleklego zapalenia oskrzeli.  
AUTHOR: Wierzbicka M; Wojcik R A  
SOURCE: PNEUMONOLOGIA POLSKA, (1981) 49 (5) 369-76.  
Journal code: 7605692. ISSN: 0376-4761.  
PUB. COUNTRY: Poland  
DOCUMENT TYPE: (CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Polish  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198110  
ENTRY DATE: Entered STN: 19900316  
Last Updated on STN: 20000303  
Entered Medline: 19811029  
CONTROLLED TERM: Check Tags: Female; Human; Male  
Adolescence  
Adult  
Aged  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease



Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Double-Blind Method  
English Abstract  
Middle Age  
Placebos  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Placebos)

L48 ANSWER 18 OF 81 MEDLINE  
ACCESSION NUMBER: 81237546 MEDLINE  
DOCUMENT NUMBER: 81237546 PubMed ID: 7250579  
TITLE: [Absorption, elimination and therapeutic effectiveness of a new antibiotic and mucolytic combination for oral administration].  
Studio sull'assorbimento, sull'eliminazione e sulla efficacia clinica di una nuova associazione antibiotico-mucolitica per via orale.  
AUTHOR: Silvia G; Giambrone F; Battaglia E; Romano M  
SOURCE: GIORNALE DI CLINICA MEDICA, (1981 Mar) 62 (3) 209-27.  
Journal code: 0413411. ISSN: 0017-0275.  
PUB. COUNTRY: Italy  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Italian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198109  
ENTRY DATE: Entered STN: 19900316  
Last Updated on STN: 20000303  
Entered Medline: 19810922  
CONTROLLED TERM: Check Tags: Female; Human; Male  
Adult  
Aged  
\*Bacterial Infections: DT, drug therapy  
Bronchitis: DT, drug therapy  
Bronchopneumonia: DT, drug therapy  
Carbocysteine: AD, administration & dosage  
Carbocysteine: ME, metabolism  
\*Carbocysteine: TU, therapeutic use  
Cefadroxil  
Cephalexin: AD, administration & dosage  
\*Cephalexin: AA, analogs & derivatives  
Cephalexin: ME, metabolism  
Cephalexin: TU, therapeutic use  
\*Cysteine: AA, analogs & derivatives  
Drug Therapy, Combination  
English Abstract  
Middle Age  
\*Respiratory Tract Infections: DT, drug therapy  
CAS REGISTRY NO.: 15686-71-2 (Cephalexin); 2387-59-9 (Carbocysteine); 50370-12-2 (Cefadroxil); 52-90-4 (Cysteine)

L48 ANSWER 19 OF 81 MEDLINE  
ACCESSION NUMBER: 81177684 MEDLINE  
DOCUMENT NUMBER: 81177684 PubMed ID: 7013137  
TITLE: [Optimal use of expectorants (current trends)].  
Optimal'noe primenienie otkharkivaiushchikh preparatov (sovremennye tendentsii).  
AUTHOR: Mirrakhimov M M; Brimkulov N N; Rafibekova Zh S  
SOURCE: TERAPEVTICHESKII ARKHIV, (1981) 53 (1) 110-7. Ref: 114  
Journal code: 2984818R. ISSN: 0040-3660.  
PUB. COUNTRY: USSR  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)

LANGUAGE: Russian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 198106  
ENTRY DATE: Entered STN: 19900316  
Last Updated on STN: 20000303  
Entered Medline: 19810613  
CONTROLLED TERM: Check Tags: Human; In Vitro  
Biological Transport  
\*Bromhexine: TU, therapeutic use  
Bronchi: SE, secretion  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
\*Cysteine: AA, analogs & derivatives  
Elasticity  
Sputum: DE, drug effects  
Sputum: ME, metabolism  
Viscosity  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 3572-43-8 (Bromhexine); 52-90-4 (Cysteine)

L48 ANSWER 20 OF 81 MEDLINE  
ACCESSION NUMBER: 79221195 MEDLINE  
DOCUMENT NUMBER: 79221195 PubMed ID: 460097  
TITLE: [Changes in sputum in catarrhal bronchitis in children after treatment with S-carboxymethylcysteine (viscosimetric studies)].  
Modificazioni dell'escreato nella bronchite catarrale in eta pediatrica dopo trattamento con S-carbossimetilcisteina. (Indagine viscosimetrica).  
Castello D; Costa G; De Candussio G  
MINERVA PEDIATRICA, (1979 Mar 15) 31 (5) 371-80.  
Journal code: 0400740. ISSN: 0026-4946.  
AUTHOR: Italy  
SOURCE: Journal; Article; (JOURNAL ARTICLE)  
PUB. COUNTRY: Italian  
DOCUMENT TYPE: Priority Journals  
LANGUAGE: 197909  
FILE SEGMENT: Entered STN: 19900315  
ENTRY MONTH: Last Updated on STN: 19900315  
ENTRY DATE: Entered Medline: 19790925  
CONTROLLED TERM: Check Tags: Female; Human; Male  
Administration, Oral  
\*Bronchitis: DT, drug therapy  
Carbocysteine: AD, administration & dosage  
\*Carbocysteine: TU, therapeutic use  
Child  
Child, Preschool  
\*Cysteine: AA, analogs & derivatives  
Drug Evaluation  
English Abstract  
Infant  
Viscosity  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

L48 ANSWER 21 OF 81 MEDLINE  
ACCESSION NUMBER: 79106561 MEDLINE  
DOCUMENT NUMBER: 79106561 PubMed ID: 367726  
TITLE: Effects of S-carboxymethylcysteine on tracheal mucus velocity.  
Goodman R M; Yergin B M; Sackner M A  
AUTHOR: CHEST, (1978 Dec) 74 (6) 615-8.  
SOURCE: Journal code: 0231335. ISSN: 0012-3692.

PUB. COUNTRY: United States  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals  
ENTRY MONTH: 197904  
ENTRY DATE: Entered STN: 19900315  
Last Updated on STN: 19980206  
Entered Medline: 19790425

## ABSTRACT:

The effects of S-carboxymethylcysteine on tracheal mucus velocity were assessed in a double blind crossover study between 2 grams S-carboxymethylcysteine and placebo. Subjects included six healthy non-smokers, eight smokers with small airway disease and chronic simple bronchitis, and eight subjects with chronic obstructive bronchitis. Tracheal mucus velocity was measured prior to and two and three hours after each subject had ingested S-carboxymethylcysteine or placebo. No significant change in tracheal mucus velocity occurred after placebo or S-carboxymethylcysteine in any of the groups, indicating that the drug has no acute effect on mucus transport.

CONTROLLED TERM: Check Tags: Female; Human; Male; Support, U.S. Gov't,  
P.H.S.  
Adult  
Bronchitis: DT, drug therapy  
\*Carbocysteine: PD, pharmacology  
Carbocysteine: TU, therapeutic use  
Chronic Disease  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Lung Diseases, Obstructive: DT, drug therapy  
Middle Age  
\*Mucus: DE, drug effects  
Smoking  
\*Trachea: DE, drug effects  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

L48 ANSWER 22 OF 81 MEDLINE  
ACCESSION NUMBER: 79085799 MEDLINE  
DOCUMENT NUMBER: 79085799 PubMed ID: 365537  
TITLE: Effect of the mucoregulator S-carboxy-methyl-cysteine in  
patients with chronic bronchitis.  
AUTHOR: Puchelle E; Aug F; Polu J M  
SOURCE: EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY, (1978 Nov 27) 14  
(3) 177-84.  
Journal code: 1256165. ISSN: 0031-6970.  
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 197903  
ENTRY DATE: Entered STN: 19900315  
Last Updated on STN: 19900315  
Entered Medline: 19790313

## ABSTRACT:

Twenty patients with stable chronic bronchitis entered a double-blind study in which changes in clinical and respiratory function and biochemical and rheological variations were examined after treatment with the mucoregulator S-carboxy-methyl-cysteine (S.C.M.C.). After one week of single-blind placebo, a two week double-blind study was initiated with placebo or oral S.C.M.C. 3 g/24h. After two weeks, a significant clinical improvement was observed in

patients treated with S.C.M.C. During treatment, there was no change in respiratory function, although a drop in FEV1/VC was noted in the placebo group. A significant increase in the viscosity of the expectorations was observed after treatment with S.C.M.C. for two weeks. The levels of secretory IgA and of serum albumin in the expectorations remained stable, whereas in the placebo group, there was a slight but significant increase in serum albumin. In this group of non-infected chronic bronchitic patients, S.C.M.C. appeared to normalize the secretory function of the bronchial mucosa by preventing inflammation and enhancing the viscoelastic properties of bronchial secretions.

CONTROLLED TERM: Check Tags: Human; Male  
Aged  
\*Bronchitis: DT, drug therapy  
Bronchitis: MI, microbiology  
Bronchitis: PP, physiopathology  
Carbocysteine: AE, adverse effects  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Double-Blind Method  
Middle Age  
Placebos  
Respiratory Function Tests  
Sputum: AN, analysis  
Sputum: DE, drug effects  
Sputum: MI, microbiology  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Placebos)

L48 ANSWER 23 OF 81 MEDLINE  
ACCESSION NUMBER: 77107156 MEDLINE  
DOCUMENT NUMBER: 77107156 PubMed ID: 797159  
TITLE: [The treatment of bronchitic syndrome using Transbronchin  
in the practice].  
Die Behandlung des bronchitischen Syndroms mit  
Transbronchin in der Praxis.  
Plietz J  
AUTHOR: ZFA. ZEITSCHRIFT FUR ALLGEMEINMEDIZIN, (1976 Dec 20) 52  
SOURCE: (35) 1832-4.  
Journal code: 7613263. ISSN: 0341-9835.  
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of  
DOCUMENT TYPE: (CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: German  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 197703  
ENTRY DATE: Entered STN: 19900313  
Last Updated on STN: 19900313  
Entered Medline: 19770321  
CONTROLLED TERM: Check Tags: Female; Human; Male  
Adolescence  
Adult  
Aged  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Middle Age  
Syndrome  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

L48 ANSWER 24 OF 81 MEDLINE

Searched by Barb O'Bryen, STIC 308-4291

ACCESSION NUMBER: 77025332 MEDLINE  
DOCUMENT NUMBER: 77025332 PubMed ID: 789027  
TITLE: S-carboxymethylcysteine in the fluidification of sputum and treatment of chronic airway obstruction.  
AUTHOR: Edwards G F; Steel A E; Scott J K; Jordan J W  
SOURCE: CHEST, (1976 Oct) 70 (4) 506-13.  
Journal code: 0231335. ISSN: 0012-3692.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals  
ENTRY MONTH: 197612  
ENTRY DATE: Entered STN: 19900313  
Last Updated on STN: 19980206  
Entered Medline: 19761223

## ABSTRACT:

The clinical results and changes in sputum found in both a short-term inpatient trial and a subsequent long-term outpatient investigation (three-month double-blind controlled study) of 82 patients with chronic bronchitis treated with a new mucolytic agent, S-carboxymethylcysteine (Mucodyne), are reported. Fluidification of sputum with reduction in certain measurements of the viscosity of morning sputum aliquots, associated with improvement in the ability to cough up bronchial secretions, significant increase in sputum volume output, and improvement in ventilation (as estimated by the forced expiratory volume in one second), were observed in both trials as dose-related responses, with an increase in the ease of expectoration and a reduction in cough frequency and dyspnea. Therapy with S-carboxymethylcysteine was well tolerated, and there were no serious adverse effects, either immediate or delayed. We suggest that the effect of the drug in fluidifying sputum may be due to a mucoregulatory mechanism which reverses the sputum macromolecular disturbances seen in chronic bronchitis.

CONTROLLED TERM: Check Tags: Female; Human; Male  
Administration, Oral  
Adult  
\*Bronchitis: DT, drug therapy  
Carbocysteine: AD, administration & dosage  
Carbocysteine: PD, pharmacology  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Forced Expiratory Volume  
Humidity  
Middle Age  
Respiratory Therapy  
\*Sputum: DE, drug effects  
Viscosity  
Vital Capacity  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

L48 ANSWER 25 OF 81 MEDLINE  
ACCESSION NUMBER: 75175470 MEDLINE  
DOCUMENT NUMBER: 75175470 PubMed ID: 1134660  
TITLE: [Studies of the clinical effectiveness of the mucolytic drug, S-carboxymethylcysteine, in the therapy of acute and chronic bronchitis].  
Indagine sull'efficacia clinica del mucolitico  
S-carbossimetilcisteine nella terapia delle bronchiti acute e croniche.  
AUTHOR: Magliulo E; Bonizzoni D; Cattaneo E; Scevola D; Concia E

SOURCE: MINERVA MEDICA, (1975 Apr 4) 66 (25) 1187-97.  
Journal code: 0400732. ISSN: 0026-4806.  
PUB. COUNTRY: Italy  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: Italian  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 197508  
ENTRY DATE: Entered STN: 19900310  
Last Updated on STN: 19900310  
Entered Medline: 19750820  
CONTROLLED TERM: Check Tags: Human; Male  
Acute Disease  
Adult  
Aged  
\*Bronchitis: DT, drug therapy  
\*Carbocysteine: TU, therapeutic use  
Chronic Disease  
\*Cysteine: AA, analogs & derivatives  
\*Expectorants: TU, therapeutic use  
Middle Age  
CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)  
CHEMICAL NAME: 0 (Expectorants)

L48 ANSWER 26 OF 81 MEDLINE  
ACCESSION NUMBER: 76154723 MEDLINE  
DOCUMENT NUMBER: 76154723 PubMed ID: 769242  
TITLE: No demonstrable effect of S-carboxymethylcysteine on  
clearance of secretions from the human lung.  
AUTHOR: Thomson M L; Pavia D; Jones C J; McQuiston T A  
SOURCE: THORAX, (1975 Dec) 30 (6) 669-73.  
Journal code: 0417353. ISSN: 0040-6376.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: (CLINICAL TRIAL)  
(CONTROLLED CLINICAL TRIAL)  
Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 197606  
ENTRY DATE: Entered STN: 19900313  
Last Updated on STN: 19980206  
Entered Medline: 19760602

ABSTRACT:  
The mucolytic efficacy of S-carboxymethylcysteine has been assessed in a double-blind crossover trial in 16 patients with chronic obstructive bronchitis. No significant difference was found between drug and placebo after four or seven days' treatment in the rate of clearance of secretions from the lung. This was measured by external counting of previously inhaled polystyrene tracer particles tagged with technetium-99m (99mTc). Lateral scans across the right chest after inhaling the aerosol showed equal penetration of particles towards the periphery of the lung in drug and placebo runs; this indicated that the airways had not been cleared of mucus by the drug. There was no significant difference between drug and placebo runs in the number of coughs or the weight and radioactive content of sputum voided or raised at the end of the run by chest percussion and postural drainage. Ventilatory capacity was not significantly changed nor was there any subjective improvement in the patients as a result of taking the drug.

CONTROLLED TERM: Check Tags: Human; Male  
Aged  
\*Bronchitis: DT, drug therapy  
Bronchitis: PP, physiopathology  
Carbocysteine: AD, administration & dosage  
\*Carbocysteine: TU, therapeutic use

Clinical Trials  
\*Cysteine: AA, analogs & derivatives  
Forced Expiratory Volume  
Lung: AN, analysis  
\*Lung: SE, secretion  
Middle Age  
\*Mucus: DE, drug effects  
Sputum: AN, analysis  
Vital Capacity

CAS REGISTRY NO.: 2387-59-9 (Carbocysteine); 52-90-4 (Cysteine)

=> fil reg; s 2387-59-9

FILE 'REGISTRY' ENTERED AT 09:23:07 ON 09 JUL 2002

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STRUCTURE FILE UPDATES: 8 JUL 2002 HIGHEST RN 437701-77-4

DICTIONARY FILE UPDATES: 8 JUL 2002 HIGHEST RN 437701-77-4

TSCA INFORMATION NOW CURRENT THROUGH January 7, 2002

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES  
for more information. See STN Note 27, Searching Properties in the CAS  
Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

L49 2 2387-59-9  
(2387-59-9/RN)

=> d ide 1-2

L49 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS

RN 25390-17-4 REGISTRY

CN Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Alanine, 3-[(carboxymethyl)thio]-, DL- (8CI)

CN DL-Cysteine, S-(carboxymethyl)-

OTHER NAMES:

CN 5-Amino-3-thiadihexanoic acid

CN DL-3-(Carboxymethylthio)alanine

CN S-(Carboxymethyl)-(RS)-cysteine

CN S-(Carboxymethyl)-DL-cysteine

CN S-(Carboxymethyl)cysteine

FS 3D CONCORD

DR 2387-59-9

MF C5 H9 N O4 S

CI COM

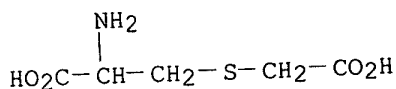
LC STN Files: ANABSTR, BEILSTEIN\*, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS,  
CASREACT, CHEMCATS, CHEMLIST, CSCHEM, IPA, MEDLINE, NIOSHTIC, RTECS\*,  
TOXCENTER, USAN, USPATFULL

(\*File contains numerically searchable property data)

Other Sources: EINECS\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

*structures  
for all Medline  
references*



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

20 REFERENCES IN FILE CA (1967 TO DATE)  
20 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L49 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS

RN 638-23-3 REGISTRY

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Alanine, 3-[(carboxymethylthio)-, L- (6CI, 8CI)

OTHER NAMES:

CN (L)-2-Amino-3-(carboxymethylthio)propionic acid

CN (R)-S-(Carboxymethyl)cysteine

CN 3-[(Carboxymethylthio)-L-alanine

CN Bronchokod

CN Carbocysteine

CN Carbocysteine

CN DF 1794Y

CN L-(Carboxymethyl)cysteine

CN LJ 206

CN Muciclar

CN Mucodyne

CN Mucoprone

CN Rhinathiol

CN Rhinathiol

CN Rinathiol

CN S-(Carboxymethyl)-(R)-cysteine

CN S-(Carboxymethyl)-L-cysteine

CN S-Carboxymethyl-L-cysteine

CN Thiodril

AR 2387-59-9

FS STEREOSEARCH

DR 11139-64-3

MF C5 H9 N O4 S

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS,

BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN,

CSCHEM, CSNB, DDFU, DRUGU, EMBASE, HODOC\*, IFICDB, IFIPAT, IFIUDB,

MRCK\*, NIOSHTIC, PHAR, PHARMASEARCH, PROMT, RTECS\*, TOXCENTER, ULIDAT,

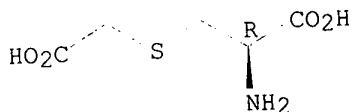
USPATFULL, VETU

(\*File contains numerically searchable property data)

Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*, WHO

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

523 REFERENCES IN FILE CA (1967 TO DATE)  
23 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

Searched by Barb O'Bryen, STIC 308-4291



523 REFERENCES IN FILE CAPLUS (1967 TO DATE)

13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> fil medl hcapl

FILE 'MEDLINE' ENTERED AT 09:23:41 ON 09 JUL 2002

FILE 'HCAPLUS' ENTERED AT 09:23:41 ON 09 JUL 2002

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=> d ibib abs hitstr 148 27-81; fil hom

L48 ANSWER 27 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:723411 HCAPLUS

DOCUMENT NUMBER: 128:43683

TITLE: Effects of fudosteine, a new mucoactive drug, on the increase in mucus secretion produced by secretagogues in human pulmonary mucoepidermoid carcinoma cells

AUTHOR(S): Kusano, K.; Nishiwaki, S.; Naito, H.; Takahashi, Y.; Tachibana, K.; Yokoyama, T.; Kai, H.; Miyata, T.

CORPORATE SOURCE: Central Research Laboratories, SS Pharmaceutical Co., Ltd, Narita, 286, Japan

SOURCE: Pharmaceutical Sciences (1997), 3(8), 403-406

CODEN: PHSCFB; ISSN: 1356-6881

PUBLISHER: Royal Pharmaceutical Society of Great Britain

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The purpose of this study was to clarify the effects of fudosteine ((-)-(R)-2-amino-3-(3-hydroxypropylthio)propionic acid), a new mucoactive drug, on mucus secretion in the human pulmonary mucoepidermoid carcinoma cell line NCI-H292. NCI-H292 cells produced hyaluronidase-resistant high-mol.-wt. glycoconjugates (HMWG), which were eluted in the void vol. on Superose 6HR column chromatog. ATP, bradykinin, and methacholine increased the basal secretion of [14C]glucosamine-labeled HMWG in NCI-H292 cells. Fudosteine significantly suppressed the HMWG secretion induced by ATP or bradykinin, but not that induced by methacholine. Other mucoactive drugs, such as ethylcysteine, ambroxol and carboxymethylcysteine, did not affect the increase in HMWG. These results indicate that fudosteine suppresses the mucin secretion induced by ATP and bradykinin in airway mucus-producing cancer cells.

IT 638-23-3

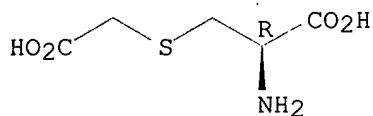
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(fudosteine effect on increase in mucus secretion produced by secretagogues in human pulmonary mucoepidermoid carcinoma cells, and comparison with other mucoactive drugs)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 28 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:12626 HCAPLUS

DOCUMENT NUMBER: 126:50995

TITLE: Pharmaceutical composition containing acetylcysteine, carbocysteine or erdosteine in combination with a beta 2 agonist and an **expectorant** for the treatment of respiratory tract disorders  
Holtshousen, Peter David  
INVENTOR(S): Adcock Ingram Limited, S. Afr.; Ashworth, Stuart  
PATENT ASSIGNEE(S): David; Holtshousen, Peter David  
SOURCE: PCT Int. Appl., 16 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: **Patent**  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

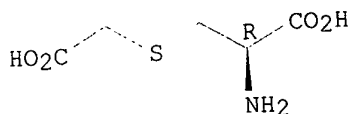
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9635452	A1	19961114	WO 1996-GB1107	19960509
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
ZA 9603590	A	19961119	ZA 1996-3590	19960507
AU 9656556	A1	19961129	AU 1996-56556	19960509
			ZA 1995-3778	19950510
PRIORITY APPLN. INFO.:			WO 1996-GB1107	19960509

AB A pharmaceutical compn. useful in the treatment of respiratory tract disorders comprises as active ingredients; (a) acetylcysteine, carbocysteine, erdosteine or a pharmaceutically acceptable salt of any of these; and (b) a .beta.2-agonist, e.g. salbutamol, terbutaline; and (c) an **expectorant**, e.g. guaiphensin, sodium citrate, ammonium chloride.

IT 638-23-3, Carbocysteine  
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)  
(pharmaceutical contg. a cysteine deriv., .beta.2-agonist and an **expectorant** for treatment of respiratory tract disorders)

RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

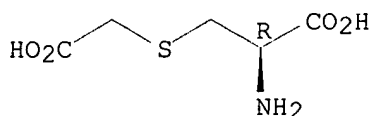


L48 ANSWER 29 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1997:154918 HCAPLUS  
DOCUMENT NUMBER: 126:162255  
TITLE: **Expectorant** compositions  
Hibi, Yoshiaki; Hirata, Takeo; Watanabe, Masazumi  
INVENTOR(S): Takeda Chemical Industries Ltd, Japan  
PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 7 pp.  
SOURCE: CODEN: JKXXAF  
DOCUMENT TYPE: **Patent**  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

JP 08337532      A2    19961224      JP 1995-147367    19950614  
AB    **Expectorant** compns. comprise mucus secretion-promoting herbal  
      medicine and mucus viscosity adjusters/mucosa lubricants for the  
      respiratory tract. An oral **expectorant** compn. comprises  
      L-ethylcysteine-HCl 250, senega exts. 450, and aster exts. 450 mg with  
      addn. of excipients.  
IT    638-23-3, Carbocysteine  
      RL: THU (**Therapeutic use**); BIOL (Biological study); USES (Uses)  
      (**expectorant** compns.)  
RN    638-23-3 HCAPLUS  
CN    L-Cysteine, S-(carboxymethyl)- (9CI)    (CA INDEX NAME)

Absolute stereochemistry.

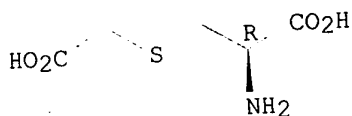


L48 ANSWER 30 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:309926 HCAPLUS  
DOCUMENT NUMBER: 125:1027  
TITLE: N-Acetyl-L-cysteine and its derivatives activate a Cl<sup>-</sup>  
conductance in epithelial cells  
AUTHOR(S): Koettgen, M.; Busch, A. E.; Hug, M. J.; Greger, R.;  
Kunzelmann, K.  
CORPORATE SOURCE: Physiol. Inst. Albert Ludwigs, Univ. Freiburg,  
Freiburg, D-79104, Germany  
SOURCE: Pfluegers Arch. (1996), 431(4), 549-555  
CODEN: PFLABK; ISSN: 0031-6768  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB    N-Acetyl-L-cysteine (NAC) is a widely used mucolytic drug in patients with  
      a variety of respiratory disorders including cystic fibrosis (CF). The  
      beneficial effects of NAC are empirical and the exact mechanism of action  
      in the airways remains obscure. In the present study the authors examd.  
      the effects on whole-cell (wc) conductance (G<sub>m</sub>) and voltage (V<sub>m</sub>) of NAC  
      and the congeners S-carboxymethyl-L-cysteine (CMC) and  
      S-carbamyl-L-cysteine (CAC) and L-cysteine in normal and CF airway  
      epithelial cells. L-Cysteine (1 mM) had no detectable effect. The  
      increase of G<sub>m</sub> (.DELTA.G<sub>m</sub>) by the other compds. was concn. dependent and  
      was (all substances at 1 mM) 3.8 (NAC), 4.2 (CMC) and 3.8 (CAC), resp.  
      The changes in G<sub>m</sub> were paralleled by an increased depolarization  
      (.DELTA.V<sub>m</sub>) when extracellular Cl<sup>-</sup> concn. was reduced to 34 mM: under  
      control conditions = 4.1 vs. 10.2 mV in the presence of NAC, CMC, CAC. In  
      the presence of NAC, CMC and CAC, the redn. in Cl<sup>-</sup> concn. was paralleled  
      by a redn. of G<sub>m</sub> by 2.1, indicating that all substances acted by  
      increasing the Cl<sup>-</sup> conductance. Anal. of intracellular pH did not reveal  
      any changes by any of the compds. (1 mM). A Cl<sup>-</sup> conductance was also  
      activated in HT29 colonic carcinoma and CF tracheal epithelial (CFDE)  
      cells but not in CFPAC-1 cells, which do not express detectable levels of  
      .DELTA.F508-CFTR, suggesting that the presence of CFTR may be a  
      prerequisite for the redn. of Cl<sup>-</sup> currents. Next the authors examd. the  
      ion currents in Xenopus oocytes microinjected with CFTR-cRNA.  
      Water-injected oocytes did not respond to activation by forskolin and  
      3-isobutyl-1-methylxanthine (IBMX) (.DELTA.G<sub>m</sub> = 0.08 .mu.S) and no current  
      was activated when these oocytes were exposed to NAC or CMC. In contrast,  
      in CFTR-cRNA-injected oocytes G<sub>m</sub> was enhanced when intracellular cAMP  
      (cAMP) was increased by forskolin and IBMX (G<sub>m</sub> = 4.5 .mu.S). G<sub>m</sub> was  
      significantly increased by 0.74 .mu.S and 0.46 .mu.S when oocytes were  
      exposed to NAC and CMC, resp. (both 1 mM). In conclusion, NAC and its

congeners activate Cl- conductances in normal and CF airway epithelial cells and hence induce electrolyte secretion which may be beneficial in CF patients. CFTR appears to be required for this response in an as yet unknown fashion.

IT 638-23-3, S-Carboxymethyl-L-cysteine  
RL: BAC (Biological activity or effector, except adverse); THU  
(Therapeutic use); BIOL (Biological study); USES (Uses)  
(N-Acetyl-L-cysteine and derivs. activate a Cl- conductance in normal  
and cystic fibrosis human airway epithelial cells in relation to CFTR)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



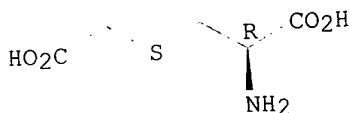
L48 ANSWER 31 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:625164 HCAPLUS  
DOCUMENT NUMBER: 125:257189  
TITLE: Pharmaceutical composition containing a  
mucolytic agent and a bronchodilator for the  
treatment of respiratory tract disorders  
Treadwell, Cecil  
INVENTOR(S): Adcock Ingram Ltd., S. Afr.  
PATENT ASSIGNEE(S): S. African, 9 pp.  
SOURCE: CODEN: SFXXAB  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ZA 9400155	A	19950711	ZA 1994-155	19940111
			ZA 1992-8567	19921106

PRIORITY APPLN. INFO.:  
AB A pharmaceutical compn. in unit dosage form comprises (a) a therapeutic dose of acetylcysteine (I) or carbocysteine or a pharmaceutically acceptable salt thereof; (b) a therapeutic dose of terbutaline (II) or a pharmaceutically acceptable salt thereof; and (c) one or more pharmaceutically acceptable excipients. A capsule contained I 100-2000, II sulfate 1-5, diluent 5-200, glidants 0-15, and disintegrants 0-20 mg.

IT 638-23-3, Carbocysteine  
RL: BAC (Biological activity or effector, except adverse);  
THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(pharmaceutical compn. contg. mucolytic agent and  
bronchodilator for treatment of respiratory tract disorders)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 32 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:35119 HCAPLUS  
DOCUMENT NUMBER: 124:176944  
TITLE: Preparation of S-(carboxymethyl)cysteine  
INVENTOR(S): Sato, Tadashi  
PATENT ASSIGNEE(S): Kojin Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: **Patent**  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07267922	A2	19951017	JP 1994-82702	19940330

OTHER SOURCE(S): CASREACT 124:176944

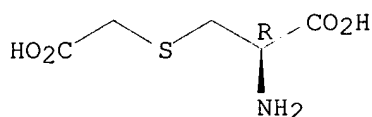
AB The compd. (I), useful as an **expectorant** and an intermediates for biotins, is prepd. by treatment of L-cystine with ClCH<sub>2</sub>CO<sub>2</sub>H (II) in the presence of NaBH<sub>4</sub>. NaBH<sub>4</sub> was gradually added to a mixt. of H<sub>2</sub>O, L-cystine, and II, which was previously adjusted to pH 8, under cooling and the reaction mixt. was further stirred at room temp. for 2 h to give 91% I.

IT **638-23-3P**, S-Carboxymethyl-L-cysteine  
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of (carboxymethyl)cysteine from cystine and ClCH<sub>2</sub>CO<sub>2</sub>H in presence of NaBH<sub>4</sub>.)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



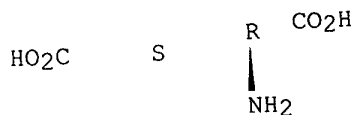
L48 ANSWER 33 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1995:997702 HCAPLUS  
DOCUMENT NUMBER: 124:37727  
TITLE: Compound benproperine pharmaceutical compositions for respiratory infections  
INVENTOR(S): Ye, Rongke  
PATENT ASSIGNEE(S): Baiyunshan Pharmaceuticals Stock-Sharing Co., Ltd., Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: **Patent**  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1104500	A	19950705	CN 1993-106648	19930610

AB Antiinflammatory, antitussive, and **expectorant** compns. for patients with respiratory infections comprise benproperine, carboxymethylcysteine and houttuynine at a ratio of 2:15:5. Capsules were formulated contg. benproperine 20, carboxymethyl cysteine 150, and houttuynine 50g.

IT 638-23-3  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(compd. benproperine pharmaceutical compns. for respiratory infections)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

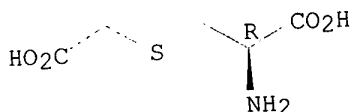


L48 ANSWER 34 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1993:261047 HCAPLUS  
DOCUMENT NUMBER: 118:261047  
TITLE: Inhalation preparations containing carbocysteine  
INVENTOR(S): Kamiyo, Shinji; Imai, Atsushi; Hibino, Kazuhide  
PATENT ASSIGNEE(S): Kyorin Seiyaku Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AB	JP 05058888	A2	19930309	JP 1991-227099	19910906
IT	638-23-3, Carbocysteine RL: BIOL (Biological study) (inhalation prepn. contg. stabilizers and, under inert gas)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

Aq. solns. (pH 6.0-7.5) contg. carbocysteine (I) and stabilizers are sealed with inert gas in a container for inhalation. I (5 g) was mixed with H<sub>2</sub>O, aq. NaOH, and 1 g Na citrate, adjusted to pH 7.0 with aq. NaOH, mixed with H<sub>2</sub>O to 1000 mL, charged into glass tube, the air purged with N<sub>2</sub>, and sealed. The inhalation prepn. was stable at 50.degree. for .gtoreq.2 mo, vs. poor stability, without the citrate and N<sub>2</sub>.

Absolute stereochemistry.



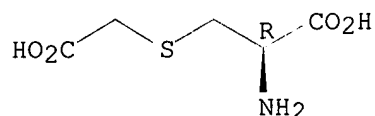
L48 ANSWER 35 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1993:261046 HCAPLUS  
DOCUMENT NUMBER: 118:261046  
TITLE: Inhalation preparations containing carbocysteine  
INVENTOR(S): Kamiyo, Shinji; Imai, Atsushi; Hibino, Kazuhide  
PATENT ASSIGNEE(S): Kyorin Seiyaku Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1

Searched by Barb O'Bryen, STIC 308-4291

## PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 05058887	A2	19930309	JP 1991-227098	19910906
AB	Aq. carbocysteine (I) solns. (pH 6.0-7.5) are sealed with inert gas in a container for single-use inhalation. I (50 g) was mixed with H <sub>2</sub> O, adjusted to pH 7.0 with aq. NaOH, mixed with H <sub>2</sub> O to 1000 mL, charged into amples, the air purged with N, and sealed to make inhalation prepn. (contg. 2 mL/ample), which was stable at 50.degree. for .gtoreq.2 mo, vs. poor stability, when the soln. was charged (50 mL/each) in glass tube and sealed without N.				
IT	<b>638-23-3</b> , Carbocysteine RL: BIOL (Biological study) (inhalation prepn. contg., under inert gas, stable)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

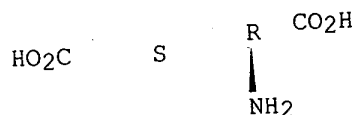
Absolute stereochemistry.



L48 ANSWER 36 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1994:8968 HCAPLUS  
DOCUMENT NUMBER: 120:8968  
TITLE: Preparation of L-S-carboxymethylcysteine L-lysine salt monohydrate as a drug  
INVENTOR(S): Argese, Maria; Bosone, Enrico; Clavenna, Gaetano; Giani, Roberto  
PATENT ASSIGNEE(S): Dompe' Farmaceutici S.p.A., Italy  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: **Patent**  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

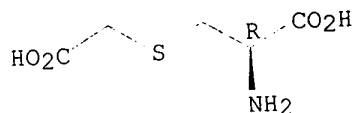
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	EP 546272	A1	19930616	EP 1992-117267	19921009
	EP 546272	B1	19960228		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	AT 134613	E	19960315	AT 1992-117267	19921009
	ES 2049700	T3	19960416	ES 1992-117267	19921009
	JP 05310686	A2	19931122	JP 1992-352125	19921210
PRIORITY APPLN. INFO.:				IT 1991-MI3338	19911212
AB	L-S-carboxymethylcysteine L-lysine salt monohydrate (I) was prepd. Thus, 1 mol L-S-carboxymethylcysteine was added to a 50% soln. of L-lysine contg. 1 mol of the latter followed by decolorization with active C, filtration and addn. of 5 vols. of EtOH to give 90% I. I has <b>mucolytic</b> , bronchosecretolytic, and antibronchospastic properties (no data).				
IT	<b>638-23-3</b> RL: RCT (Reactant) (salification of, with lysine, in prepn. of drug)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

Absolute stereochemistry.



L48 ANSWER 37 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1992:462714 HCAPLUS  
DOCUMENT NUMBER: 117:62714  
TITLE: The influence of sulfhydryl-containing mucolytics on  
the enzyme activity of human alveolar macrophages  
AUTHOR(S): Mueller, L.; Wehle, K.; Kuepper, T.; Pfitzer, P.  
CORPORATE SOURCE: Abt. Zytopathol., Heinrich-Heine-Univ., Duesseldorf,  
Germany  
SOURCE: Atemwegs- Lungenkrankh. (1992), 18(3), 107-11  
CODEN: ATLUDF; ISSN: 0341-3055  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
AB Human sputa, bronchial secretions and lavages were stained cytochem. for  
several lysosomal enzymes after having been exposed to various concns. of  
N-acetylcysteine, carbocysteine, and mesna. A redn. of enzyme activity  
was obsd. in the samples treated with N-acetylcysteine in concn. >0.1%.  
Concns. which can be achieved in bronchial mucus by systemic application  
did not reduce the enzyme activity.  
IT 638-23-3, Carbocysteine  
RL: BIOL (Biological study)  
(enzymes of lung lavage and sputum responses to, in human)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 38 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1992:113527 HCAPLUS  
DOCUMENT NUMBER: 116:113527  
TITLE: Pharmaceutical compositions containing  
phenylpropanolamine for a mucus secretagogue in the  
upper airways  
INVENTOR(S): Phipps, Roger John  
PATENT ASSIGNEE(S): Procter and Gamble Co., USA  
SOURCE: PCT Int. Appl., 33 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9117746	A1	19911128	WO 1991-US3453	19910517
W: AU, CA, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
AU 9179920	A1	19911210	AU 1991-79920	19910517

Searched by Barb O'Bryen, STIC 308-4291



EP 530311 A1 19930310 EP 1991-911164 19910517  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE  
JP 05509300 T2 19931222 JP 1991-510443 19910517  
ZA 9103831 A 19920226 ZA 1991-3831 19910521  
US 5260073 A 19931109 US 1992-893956 19920604  
AU 9520508 A1 19950803 AU 1995-20508 19950605  
PRIORITY APPLN. INFO.: US 1990-526218 19900521  
WO 1991-US3453 19910517

AB Mucus secretion is induced in the upper airways of persons with sinusitis or otitis media (characterized by retention of thickened respiratory secretions) by administration of an effective amt. of d-(+)-norephedrine, l-(-)-norephedrine, or mixts. thereof. Oral formulations are presented, as are clin. effectiveness reports.

IT 638-23-3

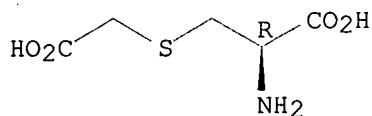
RL: BIOL (Biological study)

(upper respiratory mucus secretion-inducing norephedrine compn. contg.)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 39 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:496164 HCAPLUS

DOCUMENT NUMBER: 113:96164

TITLE: Manufacture of S-(alkoxycarbonyl)methyl-L-cysteines with tryptophan synthase

INVENTOR(S): Nakamura, Takeshi; Ishiwatari, Kenichi; Makiguchi, Nobuyoshi

PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02072891	A2	19900313	JP 1988-221358	19880906

OTHER SOURCE(S): MARPAT 113:96164

AB L-RO2CCH2SCH2CH(NH2)CO2H (R = alkyl) (I), useful as intermediates for **expectorant** S-carboxymethyl-L-cysteine (II) and other pharmaceuticals, are manufd. by reaction of L-serine (III) with HSCH2CO2R (R = same as I) in the presence of tryptophan synthase. Treatment of III 100, Bu thioglycolate 100, and pyridoxal phosphate 0.1 mM with 0.9 units tryptophan synthase from Escherichia coli MT-10242 (FERM BP-20) at 35.degree. and pH 8.5 for 30 min produced 25.1 mM S-(butoxycarbonyl)methyl-L-cysteine, whereas 0.17 mM II was produced when III was treated similarly with thioglycolic acid instead of Bu thioglycolate.

IT 638-23-3P

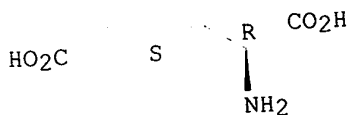
RL: PREP (Preparation)

(prepn. of, intermediate for, alkoxycarbonylmethylcysteines as)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

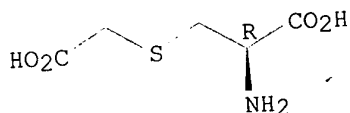


L48 ANSWER 40 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1991:150172 HCAPLUS  
DOCUMENT NUMBER: 114:150172  
TITLE: Coating of drug particles with cellulose derivatives  
and acrylic polymers  
INVENTOR(S): Poli, Stefano; Moro, Luigi; Fiori, Achille; Natali,  
Alberto  
PATENT ASSIGNEE(S): Poli Industria Chimica S.p.A., Italy  
SOURCE: Ger. Offen., 8 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3943242	A1	19900628	DE 1989-3943242	19891222
FR 2670112	A1	19920612	FR 1989-17074	19891222
			IT 1988-23075	19881223

PRIORITY APPLN. INFO.:  
AB Solid drugs are coated with a mixt. of a cellulose deriv. with a vinyl,  
acrylic and/or methacrylic and/or cyanoacrylic polymer. The coating is  
for sustained-release, taste masking, stabilization, etc. particles of a  
mixt. contg. 2 kg dihydroerogocristine methanesulfonate and 13 kg inert  
excipient were coated with a mixt. of Aquacoat ACD-30 48, Eudragit NE30D  
(acrylic ester-methacrylic ester copolymer latex) 24, ionic surfactant 3,  
and water 25%.  
IT 638-23-3, Carbocysteine  
RL: BIOL (Biological study)  
(coating of particles of, with polymers)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 41 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1991:35966 HCAPLUS  
DOCUMENT NUMBER: 114:35966  
TITLE: Temperature dependence of surface activity of films  
containing DPPC and selected drugs used in form of  
aerosols  
AUTHOR(S): Pawelek, Janusz; Hanicka, Magdalena; Kurzawa, Ryszard  
CORPORATE SOURCE: Inst. Catal. Surf. Chem., Pol. Acad. Sci., Krakow,  
30-239, Pol.  
SOURCE: Bull. Pol. Acad. Sci., Chem. (1990), Volume Date 1989,  
37(9-12), 417-21  
CODEN: BPACEQ; ISSN: 0239-7285  
DOCUMENT TYPE: Journal

Searched by Barb O'Bryen, STIC 308-4291

LANGUAGE: English

AB During therapy based on inhalation, possible interactions between the applied inhalant and pulmonary surfactant should be taken into consideration. Therefore, it seemed useful to det. in vitro at different temps. to what extent such inhalants as Atrovent, Berotec, Bricanyl, Salbutamol, Mistabron and Ambroxol affect surface activity of the monolayer of dipalmitoyl lecithin (DPPC), the basic component of pulmonary surfactant. The measurements were performed in a Langmuir trough. The temp. varied from 20.degree. to 40.degree.. All the examd. inhalants were found to increase the surface activity of DPPC monolayer, esp. at 37.degree.. Only Mistabron decreased the surface activity of DPPC monolayer, which is the result of solubilization of DPPC mols.

IT 638-23-3

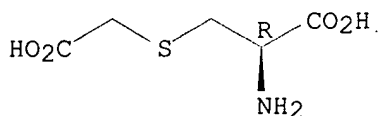
RL: BIOL (Biological study)

(aerosols contg., lung surfactant response to, temp.-dependent effects on dipalmitoylphosphatidylcholine membrane in evaluation of)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 42 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:57844 HCAPLUS

DOCUMENT NUMBER: 114:57844

TITLE: Assay of aspartylglycosylaminase by high-performance liquid chromatography

AUTHOR(S): Kaartinen, V.; Mononen, I.

CORPORATE SOURCE: Dep. Clin. Chem., Kuopio Univ., Kuopio, SF-70210, Finland

SOURCE: Anal. Biochem. (1990), 190(1), 98-101

CODEN: ANBCA2; ISSN: 0003-2697

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An aspartylglycosylaminase assay based on HPLC anal. of the substrate, aspartylglucosamine, and product, aspartate, is described. Aspartylglucosamine and aspartate are derivatized with phenylisothiocyanate and resolved by reverse-phase HPLC. The detection limit for the compds. is 2 pmol. The method can be used for anal. of aspartylglycosylaminase activity in crude cell exts. and tissue samples.

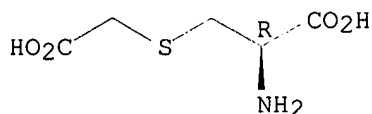
IT 638-23-3

RL: ANT (Analyte); ANST (Analytical study)  
(detn. of, HPLC method for)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

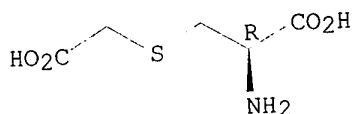


L48 ANSWER 43 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:486955 HCAPLUS

DOCUMENT NUMBER: 115:86955  
TITLE: Morphologic changes of bronchial epithelial cells induced by sulfur dioxide during the recovery stage: effect of the S-CMC and Ambroxol  
AUTHOR(S): Okamura, Takao; Satou, Shigeru; Aihara, Kaoru; Taga, Fukutarou; Okamura, Kyuya  
CORPORATE SOURCE: Cent. Inst. Electron Microsc. Res., Nippon Med. Sch., Japan  
SOURCE: Nippon Kaimen Igakkai Zasshi (1990), 21(1-2), 19-35  
CODEN: NKIZDR; ISSN: 0288-8262  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese  
AB Continuous exposure of Wistar rat bronchial tree to 100 ppm SO<sub>2</sub> revealed disintegration and loss of cilia and a decrease of mucin-secreting cells. These changes were most prominent after 3 days of exposure. After 1 wk, recovery of the damage was initiated and complete recovery was obsd. at 3 wk. The secretory granules prior to exposure to SO<sub>2</sub> contained abundant PAS-pos. component presumably representing the neutral mucin. The mucin in the recovery stage consisted of basic mucin (Alcian Blue staining). The therapeutic effect of the S-CMC (carbocysteine) was represented by the prevention of degeneration. The cell protective effect of the Ambroxol was seen by the preservation of the cilia 3 days after exposure to SO<sub>2</sub>; however, no evidence for therapeutic effect of the agent was obsd. 1 wk after the exposure.  
IT 638-23-3, Carbocysteine  
RL: BIOL (Biological study)  
(sulfur dioxide toxicity to bronchial epithelium prevention by)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 44 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1990:125241 HCAPLUS  
DOCUMENT NUMBER: 112:125241  
TITLE: Secretolytic agents for the prevention of snoring  
INVENTOR(S): Reichert, Dietrich  
PATENT ASSIGNEE(S): Spain  
SOURCE: U.S., 5 pp. Division of U.S. Ser. No. 47,560.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4876283	A	19891024	US 1989-325684	19890320
DE 3317530	A1	19841115	DE 1983-3317530	19830513
US 4831057	A	19890516	US 1987-47560	19870427
PRIORITY APPLN. INFO.:			DE 1983-3317530	19830513
			DE 1983-3317538	19830513
			US 1984-609287	19840511
			US 1987-47560	19870427
			DE 1983-3317558	19830513

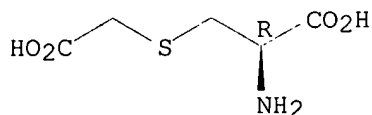
AB **Antisnoring** compns. for oral and local application in the nasal and pharyngeal cavities comprise a mucus-secreting agent (e.g. bromohexin) with diluents. Drops were manufd. from a mixt. contg. bromohexin 1.2 g, glycerol 1.0 mL, chlorobutanol 1.0 g, chamomile oil 0.2 g, and physiol. saline soln. to 100 g.

IT **638-23-3**  
RL: BIOL (Biological study)  
(**snoring** prevention by)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 45 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:77952 HCAPLUS

DOCUMENT NUMBER: 112:77952

TITLE: Preparation of S-carboxymethyl-L-cysteine

INVENTOR(S): Naijo, Shuichi; Inoue, Osami

PATENT ASSIGNEE(S): Showa Denko K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01193245	A2	19890803	JP 1988-17159	19880129
JP 2501852	B2	19960529		

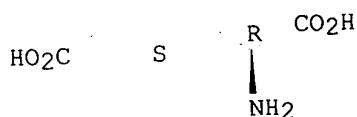
AB L-Cystine is reduced by HSO<sub>3</sub><sup>-</sup> to L-cysteine and S-sulfo-L-cysteine (I) at pH 5.5-6.0 and below the b.p. of the reaction system, the mixt. is directly treated with a monohaloacetic acid at pH 5-7.5 to give selectively S-carboxymethyl-L-cysteine (II), which is isolated; I in the mother liquor is hydrolyzed with a mineral acid to L-cystine for recycle. II is useful as an intermediate for pharmaceuticals (**expectorants**). Thus, a soln. of 2.00 g L-cystine and 2.69 g Na<sub>2</sub>SO<sub>3</sub> in 300 g H<sub>2</sub>O was adjusted to pH 5.8 with concd. H<sub>2</sub>SO<sub>4</sub> at 60.degree. and allowed to react to give a mixt. of 1.01 g L-cysteine and 1.68 g I; the mixt. was adjusted to pH 6.8 with 7.5N NaOH and treated with 1.21 g ClCH<sub>2</sub>CO<sub>2</sub>H at 60.degree. under N to give 1.34 g II. The mother liquor contg. I after sepn. of II was acidified with concd. H<sub>2</sub>SO<sub>4</sub> and heated at 115.degree. to give 0.36 g L-cystine.

IT **638-23-3P**, S-Carboxymethyl-L-cysteine  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, use of bisulfite ions as reducing agents in, as intermediate for pharmaceuticals)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 46 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:93732 HCAPLUS

DOCUMENT NUMBER: 112:93732

TITLE: Oral N-acetylcysteine or S-carboxymethylcysteine inhibit cigarette smoke-induced hypersecretion of mucus in rat larynx and trachea in situ  
Rogers, D. F.; Turner, N. C.; Marriott, C.; Jeffery, P. K.

AUTHOR(S):

CORPORATE SOURCE: Natl. Heart Lung Inst., Brompton Hosp., London, SW3 6HP, UK

SOURCE: Eur. Respir. J. (1989), 2(10), 955-60  
CODEN: ERJOEI; ISSN: 0903-1936

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two weeks exposure of rats to cigarette smoke (CS) significantly increased the secretion of fucose-contg. glycoconjugates above normal in an in situ prepn. of larynx and trachea. After equilibration mean basal secretion in CS-exposed rats was 24 .mu.g (per 30 min collection) which was 8 times higher than that of unexposed animals. N-Acetylcysteine (NAC) or S-carboxymethylcysteine (SCMC) given as 1% of the drinking water, before and after daily exposure to CS, significantly inhibited the development of the CS-induced increase in fucose secretion reducing the mean for basal secretion in each group to 7 and 5 .mu.g, resp. Neither NAC nor SCMC had significant effects on baseline glycoconjugate secretion in control animals. Albumin was inconsistently present in the secretions of both control and CS-exposed animals, whereas in those exposed to CS and also given one of the two cysteine derivs. there was a consistent increase in albumin transudation.

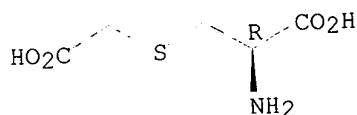
IT 638-23-3

RL: BIOL (Biological study)  
(cigarette smoke effect on mucus secretion by larynx and trachea response to)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 47 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:556294 HCAPLUS

DOCUMENT NUMBER: 109:156294

TITLE: **Expectorants** containing carbocysteine and syrups.

INVENTOR(S): Kamijo, Shinji; Imai, Atsushi; Hibino, Kazuhide

PATENT ASSIGNEE(S): Kyorin Pharmaceutical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

Searched by Barb O'Bryen, STIC 308-4291

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	JP 63156719	A2	19880629	JP 1986-303462	19861219
	JP 08013737	B4	19960214		

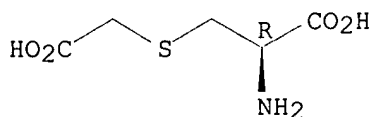
AB **Expectorant** syrups are prepd. contg. carbocysteine (I) and sugar alcs., which stabilize I. An aq. I soln. (5 % by wt./vol.) was mixed with 40 % by wt./vol. D-sorbitol (II) and left at 50.degree. for 30 days to show pH change -0.03, coloration (measured by colorimeter) 2.4, and residual I 97%, vs. -0.94, >50, and 42%, resp., for a control contg. glucose instead of I. A syrup was prepd. consisting of I 50, sorbic acid 1.0, II 400, caramel 0.6 g, aq. NaOH, fruit essence, and H2O.

IT **638-23-3**  
RL: BIOL (Biological study)  
(**expectorant** contg. sugar alcs. as sweeteners and, stability in relation to)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 48 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:89201 HCAPLUS

DOCUMENT NUMBER: 108:89201

TITLE: Morphologic changes of bronchial epithelium induced by sulfur dioxide and protective effect of the S-CMC administration

AUTHOR(S): Takao, Okamura; Shigeru, Satou; Kaoru, Aihara; Kouichi, Takagi; Kyuya, Okamura

CORPORATE SOURCE: Cent. Inst. Electron Microsc. Res., Nippon Med. Sch., Japan

SOURCE: Nippon Kaimen Igakkai Zasshi (1987), 18(1-2), 96-112  
CODEN: NKIZDR

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

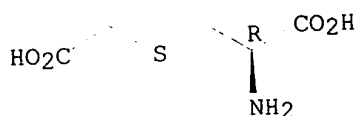
AB In rats exposed to 100 ppm SO2 for 6, 24, or 48 h, the no. of ciliated bronchial epithelial cells decreased below controls; the cells desquamated after 2-3 days. The no. of goblet cells in the bronchi increased after 6 h and desquamated after 1-3 days. After 7-day recovery, some regeneration of the damage was obsd. Oral pretreatment of the rats with 200 mg carbocysteine (S-CMC)/day for 5 days and during the SO2 exposure prevented most of the damage. Thus, carbocysteine protects the bronchial epithelium from SO2 damage.

IT **638-23-3, Carbocysteine**  
RL: BIOL (Biological study)  
(bronchi epithelium protection by, against sulfur dioxide inhalation toxicity)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 49 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:432958 HCAPLUS

DOCUMENT NUMBER: 107:32958

TITLE: Comparison of the course of regeneration of changes induced in the respiratory epithelium by the oral administration of two different mucolytics

AUTHOR(S): Konradova, V.; Vavrova, V.; Sulova, J.

CORPORATE SOURCE: Karlova Univ., Prague, Czech.

SOURCE: Stud. Pneumol. Phtiseol. Cech. (1987), 47(1-2), 86-100

CODEN: SPPCAC; ISSN: 0371-2222

DOCUMENT TYPE: Journal

LANGUAGE: Czech

AB The authors investigated the course of regeneration after changes induced in the rabbit tracheal epithelium by oral administration of 1 dose of 2 mucolytic preps., Bromhexine and Mucopront. Both mucolytics cause marked damage of the goblet cells of the respiratory epithelium. After rapid evacuation of the secretion, they degenerate. Bromhexine stimulates the massive differentiation of new mucus-secreting elements and formation of intraepithelial mucous glands. Changes induced in the tracheal epithelium by the action of the mucolytics do not recede within 3 days. Regeneration of goblet cells occurs sooner after administration of Bromhexine than after Mucopront. After Bromhexin there is also a more rapid decrease in the no. of stimulated and degenerated goblet cells in the epithelium. Seventy-two hours after administration of the 2 preps., the no. of mucus-filled and degenerated goblet cells in the 2 exptl. groups does not differ. In both instances, in the epithelium 10% degenerated goblet cells remain. Administration of the 2 substances causes local disorders of mucus flow in the respiratory pathways. The impaired self-cleaning capacity of the epithelium is restored after administration of Mucopront in 3 days, after Bromhexine bacteria and condensed layers of mucus from the area of the ciliary border do not disappear within 72 h. The persisting disorder of the self-cleaning capacity of the epithelium is obviously due to the subsequent hyperplasia of the goblet cells and the appearance of the intraepithelial mucous glands.

IT 638-23-3

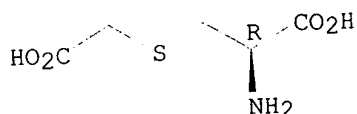
RL: BIOL (Biological study)

(respiratory epithelium regeneration after administration of)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 50 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:618683 HCAPLUS

DOCUMENT NUMBER: 105:218683

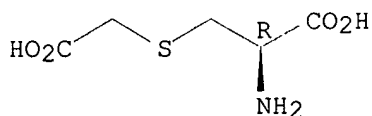
TITLE: Preclinical and clinical investigation on combination effects of expectorants in chemotherapy of infectious respiratory diseases

Searched by Barb O'Bryen, STIC 308-4291



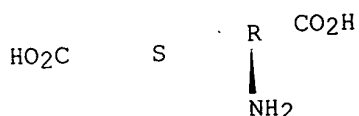
AUTHOR(S): Imaoka, Makoto  
CORPORATE SOURCE: Dep. Int. Med., Shimane Prefect. Cent. Hosp., Izumo, 693, Japan  
SOURCE: Chemotherapy (Tokyo) (1986), 34(3), 262-70  
CODEN: NKRZAZ; ISSN: 0369-4682  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese  
AB Mice were orally treated with rifampicin (I) [13292-46-1], ampicillin [69-53-4], orcephalexin [15686-71-2] alone or in combination with expectorants ambroxol (II) [18683-91-5], carbocysteine [638-23-3], or serratiopeptidase [37312-62-2]. After combination treatment with expectorants peak blood levels of the antibiotics increased in serum, lung, liver, and kidney. After combination of I plus II, the antibiotic concns. increased in serum and lung; the peak level increased by 46-137%. The results are discussed in terms of chemotherapy of infectious respiratory disease.  
IT 638-23-3  
RL: BIOL (Biological study)  
(respiratory tract infection therapy with antibiotics and)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 51 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1986:218907 HCAPLUS  
DOCUMENT NUMBER: 104:218907  
TITLE: Regeneration of changes induced in rabbit tracheal epithelium by a single oral dose of a mucolytic agent  
AUTHOR(S): Konradova, V.; Vavrova, V.; Sulova, J.  
CORPORATE SOURCE: Fac. Pediatr., Charles Univ., Prague, Czech.  
SOURCE: Folia Morphol. (Prague) (1986), 34(1), 52-8  
CODEN: FMORAO; ISSN: 0015-5640  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB In rabbits, carbocysteine [638-23-3] (100 mg, orally) did not have much effect on the ciliated cells, but it markedly stimulated and damaged the goblet cells. The percentage of degenerated goblet cells peaked in 60 min. Seventy-two h after administration of the mucolytic agent 26% of the stimulated and 10% of degenerated goblet cells were left in the epithelium. The excessive amt. of secretory material released into the airway lumen caused local disturbances of the mucus flow which were still pronounced 24 h after the drug administration and had not disappeared completely by the end of the exptl. period (72 h).  
IT 638-23-3  
RL: BIOL (Biological study)  
(toxicity of, to trachea epithelium)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

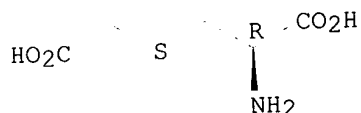
Absolute stereochemistry.



L48 ANSWER 52 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1986:88964 HCAPLUS  
DOCUMENT NUMBER: 104:88964  
TITLE: Highly-pure S-(carboxymethyl)-L-cysteine hydrochloride  
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: **Patent**  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 60072857	A2	19850424	JP 1983-180030	19830928
AB	Title compd., the hydrochloride salt of an <b>expectorant</b> (no data), was prepd. in high purity by crystg. S-(carboxymethyl)-L-cysteine (I) as the HCl salt from its soln. contg. L-cystine (II). Thus, a soln. of 200 g I contg. 1% II in aq. HCl was heated at 70.degree., seeded with I.HCl, cooled, filtered, and the filtrate neutralized with NaOH to give 120 g I of 99.5% purity (II content .ltoreq. 0.20%).				
IT	<b>638-23-3P</b> RL: PUR (Purification or recovery); PREP (Preparation) (purifn. of)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

Absolute stereochemistry.



L48 ANSWER 53 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1986:88962 HCAPLUS  
DOCUMENT NUMBER: 104:88962  
TITLE: Purification of S-(carboxymethyl)-L-cysteine  
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: **Patent**  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 60072855	A2	19850424	JP 1983-180028	19830928
AB	The title compd. (I), useful as an <b>expectorant</b> (no data), was purified by seeding solns. contg. both I and cystine (II) with II and sepg. II by adjusting to a pH close to its isoelec. point. Thus, a soln.				

of 40 g I in aq. NaOH contg. 2 wt.% of II was adjusted to pH 6.5, 0.2 g II added, and the resulting mixt. heated at 50.degree. for 4 days to give 38 g I of .gtoreq.99.5% purity.

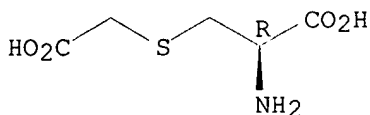
IT **638-23-3P**

RL: PUR (Purification or recovery); PREP (Preparation)  
(purifn. of, as **expectorant**)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 54 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1986:51102 HCAPLUS

DOCUMENT NUMBER: 104:51102

TITLE: S-carboxymethyl-D-cysteine

PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60069063	A2	19850419	JP 1983-178757	19830927
JP 03040022	B4	19910617		

AB Title compd. (I), useful as an **expectorant** (no data), was purified by adsorbing L-cystine (II) with strongly acidic cation exchangers from the acidic soln. of I contg. II. Thus, HCl soln. of I (pH = 0.2) contg. II was eluted through strongly acidic cation exchanger (SKIB, H type) and the eluant neutralized to give I in 99.5% purity.

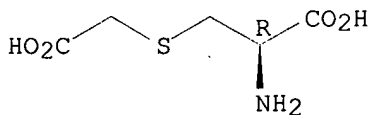
IT **638-23-3P**

RL: PUR (Purification or recovery); PREP (Preparation)  
(purifn. of, as **expectorant**)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 55 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:428377 HCAPLUS

DOCUMENT NUMBER: 107:28377

TITLE: Process for the preparation of zinc carbocysteinate

INVENTOR(S): Buxade Vinas, Antonio

PATENT ASSIGNEE(S): Laboratorios Vinas S. A., Spain

SOURCE: Span., 7 pp.

CODEN: SPXXAD

DOCUMENT TYPE: **Patent**

LANGUAGE: Spanish  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ES 524820	A1	19850201	ES 1983-524820	19830808
GB 2146324	A1	19850417	GB 1984-4634	19840222
GB 2146324	B2	19870218		
FR 2550446	A1	19850215	FR 1984-12271	19840727
FR 2550446	B1	19871211		
JP 60054354	A2	19850328	JP 1984-161492	19840731
US 4618625	A	19861021	US 1984-636201	19840731
DE 3428399	A1	19850228	DE 1984-3428399	19840801
			ES 1983-524820	19830808

## PRIORITY APPLN. INFO.:

AB Zn carbocysteinate (1:2) (I), useful as a mucoserous agent (no data), is prepd. by salification of carbocysteine (II) with ZnO, Zn(OH)<sub>2</sub>, or another Zn salt in approx. stoichiometric proportions in one or more polar solvents. An aq. soln. of 44 g Zn (OAc)<sub>2</sub> was added to an aq. suspension of 35.8 g II, and the mixt. was refluxed for 2 h to ppt. 35 g I.

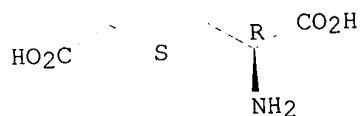
IT 638-23-3, Carbocysteine

RL: BIOL (Biological study)  
(salt exchange of, with zinc salts)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 56 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1985:523924 HCAPLUS  
DOCUMENT NUMBER: 103:123924  
TITLE: Cysteine derivatives  
INVENTOR(S): Puricelli, Laura  
PATENT ASSIGNEE(S): Magis Farmaceutici S.r.l., Italy  
SOURCE: Eur. Pat. Appl., 18 pp.  
CODEN: EPXXDW

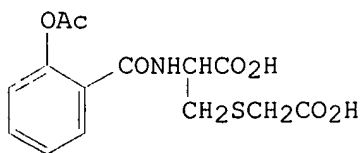
DOCUMENT TYPE: Patent  
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 143399	A2	19850605	EP 1984-113796	19841115
EP 143399	A3	19860723		
EP 143399	B1	19880706		
R: AT, BE, CH, DE, FR, GB, LI, LU, NL, SE				
AT 35536	E	19880715	AT 1984-113796	19841115
US 4559360	A	19851217	US 1984-673619	19841121
			IT 1983-23844	19831123
			EP 1984-113796	19841115

PRIORITY APPLN. INFO.:

GI



AB Cysteine derivs.  $\text{RO}_2\text{CCH}_2\text{SCH}_2\text{CH}(\text{NHR}_1)\text{CO}_2\text{R}_2$  (R, R<sub>1</sub>, R<sub>2</sub> = H, acetylsalicyloyl) were prepd. as **mucolytics**, antipyretics, analgesics, and inflammation inhibitors. Thus, L- $\text{HO}_2\text{CCH}_2\text{SCH}_2\text{CH}(\text{NH}_2)\text{CO}_2\text{H}$  was N-acylated with 2-AcOC<sub>6</sub>H<sub>4</sub>COCl in THF to give cysteine deriv. I. The toxicity of I in rats was LD<sub>50</sub> 4,800 mg/kg (oral). Antiinflammatory, antipyretic, and antibronchial activities of the above cysteine derivs. are discussed.

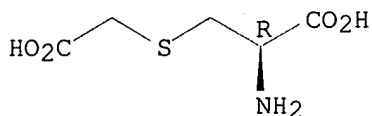
IT **638-23-3**

RL: RCT (Reactant)  
(benzoylation of, with acetoxybenzoyl chloride)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 57 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:553780 HCAPLUS

DOCUMENT NUMBER: 103:153780

TITLE: Comparison of the effect of three oral mucolytics on the ultrastructure of the tracheal epithelium in rabbits

AUTHOR(S): Konradova, Vaclava; Vavrova, V.; Sulova, J.

CORPORATE SOURCE: Lab. Electron Microsc., Res. Inst. Child Dev., Prague, 150 00, Czech.

SOURCE: Respiration (1985), 48(1), 50-7

CODEN: RESPBD; ISSN: 0025-7931

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of the application of a single oral dose of 100 mg of three mucolytic agents [N-acetylcysteine [616-91-1], carbocysteine [638-23-3] and 2-mercaptoethane sulfonic acid [3375-50-6]] on the ultrastructure of the tracheal epithelium of healthy rabbits was studied. Due to the function of oral mucolytics, the goblet cells were overstimulated and injured. 2-Mercaptoethane sulfonic acid was the least irritating substance. Acetylcysteine produced the most pronounced injury of the goblet cells, followed by rapid differentiation of these cells. Oral administration of all mucolytics studied caused local impairment of mucus flow in the airways.

IT **638-23-3**

RL: BIOL (Biological study)  
(trachea epithelium toxicity from)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



PATENT ASSIGNEE(S): Spain  
SOURCE: Ger. Offen., 17 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: **Patent**  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3317530	A1	19841115	DE 1983-3317530	19830513
CA 1216232	A1	19870106	CA 1983-429349	19830531
AU 8427807	A1	19841115	AU 1984-27807	19840509
AU 574360	B2	19880707		
ZA 8403502	A	19841224	ZA 1984-3502	19840509
CA 1223210	A1	19870623	CA 1984-453961	19840509
EP 125634	A1	19841121	EP 1984-105287	19840510
EP 125634	B1	19900926		

R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE

AT 56879	E	19901015	AT 1984-105287	19840510
JP 60034909	A2	19850222	JP 1984-96304	19840514
CH 662734	A	19871030	CH 1984-4619	19840926
US 4831057	A	19890516	US 1987-47560	19870427
US 4876283	A	19891024	US 1989-325684	19890320

PRIORITY APPLN. INFO.:

DE 1983-3317530	19830513
DE 1983-3317538	19830513
DE 1983-3317558	19830513
EP 1984-105287	19840510
US 1984-609287	19840511
US 1987-47560	19870427

AB An **antisnoring** agent for topical application to the nose or throat contains a secretolytic together with mucous membrane-compatible carriers or diluents. The compns. are in spray or inhalation soln. forms. The active secretolytics regulate and normalize mucus viscosity, decrease mucus adhesion by activation of surfactant properties, stimulate serous mucus prodn., and activate the mucociliary function. A nasal compn. was prepd. from a mixt. of ambroxol-HCl [23828-92-4] 10.0, glycerol [56-81-5] 1.0 mL, benzalkonium chloride 1.0 g and physiol. saline soln. to 100 mL for 1/2 - 1 mL doses.

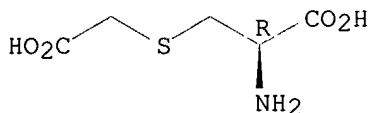
IT **638-23-3**

RL: BIOL (Biological study)  
(nasal **antisnoring** pharmaceuticals contg.)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 60 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1985:25034 HCAPLUS

DOCUMENT NUMBER: 102:25034

TITLE: S-Carboxymethylcysteine derivatives with therapeutic activity and pharmaceutical compositions containing them

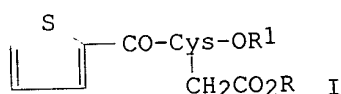
PATENT ASSIGNEE(S): Istituto Biochimico Pavese S.p.A., Italy

SOURCE: Belg., 17 pp.  
CODEN: BEXXAL

DOCUMENT TYPE: **Patent**  
LANGUAGE: **French**  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 899777	A1	19840917	BE 1984-213024	19840529
ES 532870	A1	19850616	ES 1984-532870	19840526
CH 661511	A	19870731	CH 1984-2628	19840529
FR 2549057	A1	19850118	FR 1984-8519	19840530
FR 2549057	B1	19870116		
			IT 1983-21358	19830530

PRIORITY APPLN. INFO.:  
GI



AB S-Carboxymethylcysteine derivs. I (R = H, alkali or alk. earth metal, or org. or inorg. base or basic amino acid or antibiotic residue; R1 = H, alkali or alk. earth metal) were prepd. Thus, an aq. soln. of S-carboxymethylcysteine was neutralized with NaOH, 2-thiophenecarbonyl chloride in AcOEt added at 0-5.degree., and the mixt. kept at 2 h at 30-40.degree. to give I (R = R1 = H) (II). The Ca salt of II had higher **mucolytic** activity than acetylcysteine in mice.

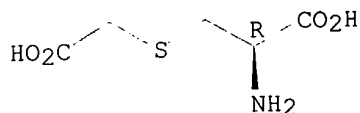
IT 638-23-3

RL: RCT (Reactant)  
(acylation of, with thiophenecarbonyl chloride)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



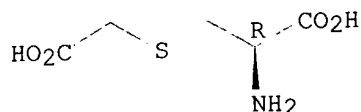
IT 638-23-3DP, derivs.

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



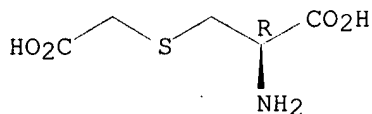
L48 ANSWER 61 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1983:482288 HCAPLUS  
DOCUMENT NUMBER: 99:82288  
TITLE: Change in glycoprotein composition in tracheal

Searched by Barb O'Bryen, STIC 308-4291



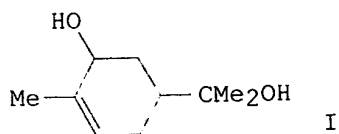
AUTHOR(S): submucosal glands by S-carboxymethylcysteine treatment  
Takeda, Hiroshi; Ohkura, Yasufumi; Misawa, Miwa;  
Yanaura, Saizo  
CORPORATE SOURCE: Sch. Pharm., Hoshi Univ., Tokyo, 142, Japan  
SOURCE: Nippon Yakurigaku Zasshi (1983), 82(1), 19-25  
CODEN: NYKZAU; ISSN: 0015-5691  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese  
AB The mechanism for the expectorant effect of S-carboxymethylcysteine (I) [ 638-23-3] was studied histol., and histochem. using isolated canine trachea. Following I treatment, the no. of total glycoprotein-contg. goblet cells (GC) did not change. The nos. of acid glycoprotein (II)-, . neutral glycoprotein (III)-, and sulfated glycoprotein (IV)-contg. GC were also unaltered in a concn. range of 10<sup>-7</sup> to 10<sup>-4</sup>M. On the other hand, the ratio of the acinar inner diam. of submucosal glands (SG) to the tracheal wall thickness was increased with 10<sup>-5</sup> and 10<sup>-4</sup>M of I and the thickness of the acini of SG decreased with 10<sup>-4</sup>M I. Although the ratio of the nos. of II- to III-contg. glandular cells and II content in the cells did not change, the no. of IV-contg. glandular cells significantly decreased concn.-dependently. Apparently, I had a selective secretagogic action on SG, and an action which alters the compn. of II, a chief viscous factor, in the mucous granules of SG.  
IT 638-23-3  
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
(glycoproteins of tracheal submucosal glands response to)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 62 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1983:149605 HCAPLUS  
DOCUMENT NUMBER: 98:149605  
TITLE: Pharmaceutical composition containing  
S-carboxymethylcysteine and sobrerol  
INVENTOR(S): Massaroli, Giangiacomo  
PATENT ASSIGNEE(S): Poli Industria Chimica S.p.A., Italy  
SOURCE: Fr. Demande, 9 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: **Patent**  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2506614	A1	19821203	FR 1982-9236	19820527
FR 2506614	B1	19860314		
DE 3219994	A1	19830127	DE 1982-3219994	19820527
PRIORITY APPLN. INFO.: GI			IT 1981-22000	19810528

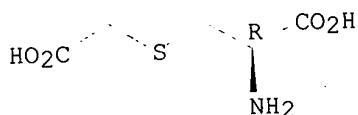


AB sobrerol (I) [498-71-5] is combined with the **mucolytic** agent S-carboxymethylcysteine (II) [638-23-3] to improve its antiinflammatory-**mucolytic** activity, to reduce the viscosity of bronchial secretions, and to favor the regeneration of bronchial mucus. A syrup was prepd. contg. II 5, I 0.8, sucrose 42, Me p-hydroxybenzoate 0.15, NaH2PO4 0.5, NaOH 1.11, flavor 0.0665, and H2O to 100 g. Capsules and suppositories and other dosage forms contg. I and II were also prepd.

IT 638-23-3  
RL: BIOL (Biological study)  
(antitussive compns. contg. sobrerol and)

RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

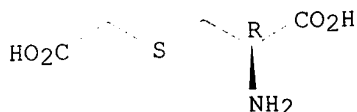


L48 ANSWER 63 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1982:608359 HCAPLUS  
DOCUMENT NUMBER: 97:208359  
TITLE: Effect of oral administration of the mucolytic agent Mucopront on the ultrastructure of the epithelium of the respiratory passages  
AUTHOR(S): Konradova, V.; Vavrova, V.; Sulova, J.  
CORPORATE SOURCE: Fak. Detskeho Lek., KU, Prague, Czech.  
SOURCE: Cesk. Pediatr. (1982), 37(9), 497-500, 2 plates  
CODEN: CEPEA3; ISSN: 0069-2328  
DOCUMENT TYPE: Journal  
LANGUAGE: Czech  
AB At 20 and 60 min after a single oral administration of 100 mg Mucopront (carbocysteine) [638-23-3] to rabbits, no effect was obsd. on the ultrastructure of the ciliated cells of the tracheal epithelium. Goblet cells, however, were markedly affected. The excessive amt. of mucus released from the goblet cells impaired the self-cleaning ability of the tracheal epithelium.

IT 638-23-3  
RL: BIOL (Biological study)  
(respiratory tract epithelium ultrastructure response to)

RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

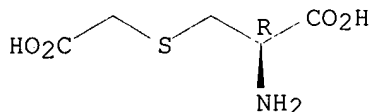
Absolute stereochemistry.



L48 ANSWER 64 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1981:575817 HCAPLUS  
DOCUMENT NUMBER: 95:175817  
TITLE: Pharmaceutical compositions with **mucolytic**,  
bronchosecretolytic and antibronchospastic activity  
PATENT ASSIGNEE(S): Dompe Farmaceutici S.p.A., Italy  
SOURCE: Belg., 6 pp.  
CODEN: BEXXAL  
DOCUMENT TYPE: **Patent**  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	----	-----	-----
	BE 887922	A1	19810701	BE 1981-204105	19810312
PRIORITY APPLN. INFO.:				IT 1980-20699	19800317
AB	(.+-.)-Lysine (-)-carboxymethylcysteinate (I) [79458-68-7], prepd. by treating (-)-S-carboxymethylcysteine [638-23-3] with (.+-.)-lysine-HCl [70-53-1], has a high <b>mucolytic</b> , bronchosecretolytic, and antibronchospastic activity and high bioavailability, as compared to carboxymethylcysteine. I can be used in the form of tablets, capsules, syrups, or parenteral solns.				
IT	<b>638-23-3</b> RL: RCT (Reactant) (reaction of, with lysine hydrochloride)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

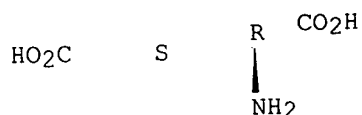
Absolute stereochemistry.



L48 ANSWER 65 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1982:173826 HCAPLUS  
DOCUMENT NUMBER: 96:173826  
TITLE: Tissue distribution of S-carboxymethylcysteine in the rat: concentration in mucus-producing organs including the prostate  
AUTHOR(S): Bodmer, Judith L.; Waring, Rosemary H.  
CORPORATE SOURCE: Dep. Biochem., Univ. Birmingham, Birmingham, B15 2TT, UK  
SOURCE: Biochem. Soc. Trans. (1981), 9(6), 549-50  
CODEN: BCSTB5; ISSN: 0300-5127  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Autoradiog. examn. of the distribution of tissue labeling in rats given <sup>14</sup>C-labeled S-carboxymethylcysteine (I) [638-23-3] (100 mg/kg, orally) indicated that I or a metabolite has some affinity for bronchopulmonary tissue, but that concns. in other mucus-producing organs may be as high if not higher than those in the lung. This may have therapeutic implications, particularly in the treatment of chronic prostatitis, where the mucolytic action of I might be effective.  
IT **638-23-3**  
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(pharmacokinetics of, in mucus-producing tissues)  
RN 638-23-3 HCAPLUS.

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

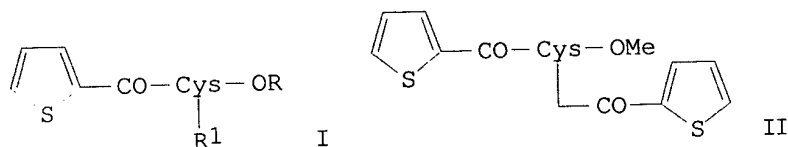
Absolute stereochemistry.



L48 ANSWER 66 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1980:472302 HCAPLUS  
DOCUMENT NUMBER: 93:72302  
TITLE: Cysteine derivatives  
INVENTOR(S): Dong, Le Hao; Coquelet, Claude  
PATENT ASSIGNEE(S): Laboratoires Chauvin-Blache S. A., Fr.  
SOURCE: Fr. Demande, 12 pp. Addn. to Fr. Demande 2,266,502.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2430945	A2	19800208	FR 1978-20878	19780712

GI



AB Cysteines I (R = H, C1-8 alkyl; R1 = .alpha.-thenoyl, CH2CO2H) were prepd. as bronchial protectors. Thus, N-.alpha.-thenoyl-L-cysteine Me ester was S-acylated with .alpha.-thenoyl chloride to give 70% cysteine II. I (R = H, R1 = CH2CO2H) (III) was also prepd. Data are given on the treatment of rats exposed to SO2 gas with II (360 mg/kg) and III (400 mg/kg).

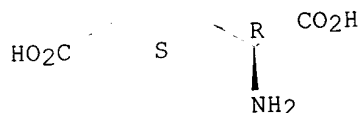
IT 638-23-3

RL: RCT (Reactant)  
(N-acylation of, with thenoyl chloride)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

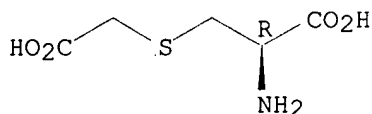


L48 ANSWER 67 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1981:57721 HCAPLUS  
DOCUMENT NUMBER: 94:57721

Searched by Barb O'Bryen, STIC 308-4291

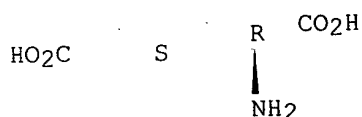
TITLE: The effect of mucolytic agents on the rheologic and transport properties of canine tracheal mucus  
AUTHOR(S): Puchelle, E.; Sadoul, P.  
CORPORATE SOURCE: Unite Rech. Physiopathol., INSERM, Vandoeuvre-les-Nancy, 54500, Fr.  
SOURCE: Am. Rev. Respir. Dis. (1980), 122(5, Pt. 1), 808-9  
CODEN: ARDSBL; ISSN: 0003-0805  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English  
AB A review with 11 refs. of evidence to indicate that S-carboxymethyl cysteine [638-23-3] is not purely a mucolytic agent but is a mucoregulator capable of normalizing the secretory disorders of the bronchial mucosa.  
IT 638-23-3  
RL: BIOL (Biological study)  
(mucus secretion by bronchi response to)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 68 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1980:400482 HCAPLUS  
DOCUMENT NUMBER: 93:482  
TITLE: The effect of mucolytic agents on the rheologic and transport properties of canine tracheal mucus  
AUTHOR(S): Martin, Roberto; Litt, Mitchell; Marriott, Christopher  
CORPORATE SOURCE: Dep. Bioeng., Univ. Pennsylvania, Philadelphia, PA, 19104, USA  
SOURCE: Am. Rev. Respir. Dis. (1980), 121(3), 495-500  
CODEN: ARDSBL; ISSN: 0003-0805  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The effect of several SH and other agents on the rheol. and mucociliary transport properties of a model secretion, reconstituted canine tracheal mucus, was investigated. The mucus was obtained via the canine tracheal pouch. Rheol. properties were detd. by microrheometry, and the ciliary transport rate was detd. using the frog palate technique. N-Acetyl cysteine [616-91-1] decreased the elastic modulus, leading to improved mucociliary transport at concns. such that the mucin did not ppt. S-Carboxymethyl cysteine [638-23-3] had no effect on either mucus properties or mucociliary transport rate, and its reported effectiveness in vivo must be due to some mechanism other than solubilization of mucin. Similar results were found with other blocked SH compds. Urea and KI did decrease mucus elasticity, but were harmful to cilia at the concns. needed.  
IT 638-23-3  
RL: BIOL (Biological study)  
(tracheal mucus transport response to)  
RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 69 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1981:435443 HCAPLUS

DOCUMENT NUMBER: 95:35443

TITLE: Tracheobronchial function in health and disease.

Effect of mucolytic substances

AUTHOR(S): Melville, G. Norris; Ismail, S.; Sealy, C.

CORPORATE SOURCE: Physiol. Dep., Univ. West Indies, Kingston, Jamaica

SOURCE: Respiration (1980), 40(6), 329-36

CODEN: RESPBD; ISSN: 0025-7931

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of mucolytic and expectorant substances on ciliary beat frequency, mucus transport velocity, and mucus prodn., was investigated in normal and bronchitic rats. N-Acetylcysteine [616-91-1] and S-carboxymethylcysteine [638-23-3] were mildly cilioexcitatory at low and ciliodepressive at higher concns. in both normal and bronchitic rats. A similar pattern was seen in mucus transport velocity. Bisolvon [611-75-6] enhanced all aspects of mucociliary activity in both groups of animals. Sobrepin [78006-54-9] was less effective than Bisolvon and more effective than Tachoquin [9046-29-1]. Gelomyrtol [8002-55-9], Ozothine [8031-65-0] and prostaglandin E1 [745-65-3] were all cilioexcitatory in rats with bronchitis. Mucus transport velocity was similarly stimulated by both Gelomyrtol and Ozothine. Ammonium chloride and potassium iodide enhanced mucociliary activity in normal and bronchitic rats. All substances stimulated mucus prodn., however, the most potent was prostaglandin E1. The mechanisms for increased mucociliary activity involve inter alia the probable cleaving of disulfide bridges, decreased mucosal swelling, altered rheol. characteristics and stimulation of adenylate cyclase.

IT 638-23-3

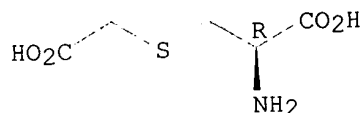
RL: BIOL (Biological study)

(ciliary beat frequency and mucus transport and mucus prodn. response to)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 70 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1979:581454 HCAPLUS

DOCUMENT NUMBER: 91:181454

TITLE: Therapeutic compositions with bacteriolytic and mucolytic action

INVENTOR(S): Prugnaud, Robert Louis

PATENT ASSIGNEE(S): Fr.

SOURCE: Fr. Demande, 18 pp.

CODEN: FRXXBL

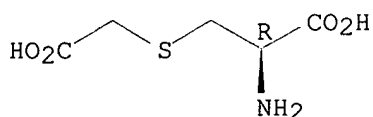
DOCUMENT TYPE: Patent

Searched by Barb O'Bryen, STIC 308-4291

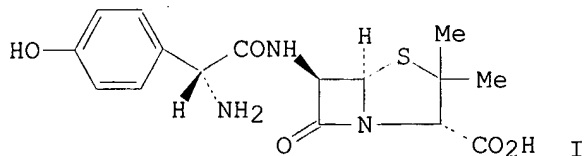
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	FR 2398497	A1	19790223	FR 1977-22715	19770725
AB	A <b>mucolytic</b> and bactericidal compn. contains ampicillin [69-53-4] and S-carboxymethylcysteine [638-23-3].				
IT	<b>638-23-3</b> RL: BIOL (Biological study) (bactericidal- <b>mucolytic</b> compn. contg. ampicillin and)				
RN	638-23-3 HCAPLUS				
CN	L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)				

Absolute stereochemistry.



L48 ANSWER 71 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1980:33658 HCAPLUS  
DOCUMENT NUMBER: 92:33658  
TITLE: Effects of S-carboxymethylcysteine on the absorption of orally administered amoxicillin in rats  
AUTHOR(S): Broccali, G.; Nusdeo, O.  
CORPORATE SOURCE: Lab. Ric. Biomed., Ital. Soc. Farm., Trezzano, Italy  
SOURCE: Riv. Farmacol. Ter. (1979), 10(2), 173-8  
CODEN: RVFTBB; ISSN: 0302-1750  
DOCUMENT TYPE: Journal  
LANGUAGE: Italian  
GI

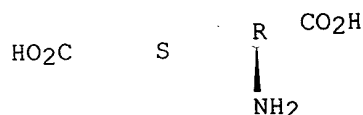


AB The absorption of intragastrically administered Na amoxicillin (I Na salt) [34642-77-8] (100 mg/kg) in rats was enhanced by the simultaneous administration of the mucolytic compd. S-carboxymethylcysteine [638-23-3] (30 mg/kg), as shown by increased I concns. in the serum, lungs, and inflammatory exudate.

IT **638-23-3**  
RL: BIOL (Biological study)  
(amoxicillin absorption by digestive tract increase by)

RN 638-23-3 HCAPLUS  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

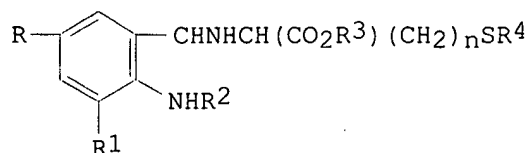


L48 ANSWER 72 OF 81 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1978:191491 HCAPLUS  
 DOCUMENT NUMBER: 88:191491  
 TITLE: Sulfur-containing N-benzylamino acids  
 INVENTOR(S): Baille-Barrelle; Vigneron, Maurice; Lespagnol, Charles  
 PATENT ASSIGNEE(S): Laboratoires Boehringer Ingelheim, Fr.  
 SOURCE: Ger. Offen., 27 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2628911	A1	19780112	DE 1976-2628911	19760628
FI 7701834	A	19771229	FI 1977-1834	19770610
FI 68613	B	19850628		
FI 68613	C	19851010		
AT 7704215	A	19780815	AT 1977-4215	19770615
AT 348983	B	19790312		
NO 7702237	A	19771229	NO 1977-2237	19770624
NO 144421	B	19810518		
NO 144421	C	19810826		
BE 856157	A1	19771227	BE 1977-178820	19770627
DK 7702854	A	19771229	DK 1977-2854	19770627
DK 146445	B	19831010		
DK 146445	C	19840319		
SE 7707418	A	19771229	SE 1977-7418	19770627
SE 441093	B	19850909		
SE 441093	C	19851219		
NL 7707085	A	19771230	NL 1977-7085	19770627
JP 53031630	A2	19780325	JP 1977-76438	19770627
ES 460117	A1	19781001	ES 1977-460117	19770627
ZA 7703835	A	19790228	ZA 1977-3835	19770627
US 4185114	A	19800122	US 1977-810087	19770627
CH 629483	A	19820430	CH 1977-7873	19770627
FR 2357539	A1	19780203	FR 1977-19825	19770628
FR 2357539	B1	19821112		
GB 1565411	A	19800423	GB 1977-27068	19770628
GB 1565412	A	19800423	GB 1979-197	19770628
GB 1565413	A	19800423	GB 1979-198	19770628
AT 7803143	A	19781115	AT 1978-3143	19780502
AT 350523	B	19790611		
AT 7803144	A	19790115	AT 1978-3144	19780502
AT 351506	B	19790725		
AT 7803145	A	19790115	AT 1978-3145	19780502
AT 351507	B	19790725		
ES 470892	A1	19790201	ES 1978-470892	19780616
ES 470890	A1	19790201	ES 1978-470890	19780616
PRIORITY APPLN. INFO.:			DE 1976-2628911	19760628
			GB 1977-2628911	19760628
			AT 1977-4215	19770615
			GB 1977-27068	19770628

GI





I

AB N-benzyl S-contg. amino acids I (R and R<sub>1</sub> = H, halo; R<sub>2</sub> = H, aliph, acyl; R<sub>3</sub> = H, C1-4 alkyl; R<sub>4</sub> = H, C1-3 alkyl, carboxy lower alkyl, acyl; n = 1, 2), their inorg. or org. acid addn. salts, their sulfonic acid salts, and, if R<sub>3</sub> = H, their compds. with inorg. or org. bases or basic amino acids were prep'd. as agents for the treatment of bronchial hypersecretions produced by irritations. Thus, methionine was treated with o-nitrobenzaldehyde to give the Schiff base which was reduced with NaBH<sub>4</sub> to give o-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>-Met-OH (II). II was hydrogenated over Raney Ni to give 80% o-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>-Met-OH which was brominated by Br in HOAc at 60-65.degree. to give 27.5% I (R = R<sub>1</sub> = Br, R<sub>2</sub> = R<sub>3</sub> = H, R<sub>4</sub> = Me) (III). III at 468.7 mg/kg was used in guinea pigs against bronchial hypersecretions produced by inhalation of NH<sub>3</sub> vapor.

IT 638-23-3

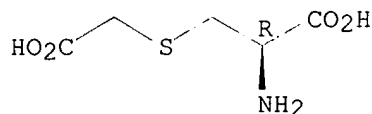
RL: RCT (Reactant)

(reaction of, with nitrobenzaldehyde)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 73 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1978:471708 HCAPLUS

DOCUMENT NUMBER: 89:71708

TITLE: The biological fate of vinylidene chloride in rats

AUTHOR(S): Jones, B. K.; Hathway, D. E.

CORPORATE SOURCE: Cent. Toxicol. Lab., Imp. Chem. Ind. Ltd., Alderley Park/Cheshire, Engl.

SOURCE: Chem.-Biol. Interact. (1978), 20(1), 27-41

CODEN: CBINA8; ISSN: 0009-2797

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The main eliminative route for <sup>14</sup>C-labeled vinylidene chloride (I) [75-35-4] after intragastric, i.v. or i.p. administration to rats was pulmonary; both unchanged I and I-related CO<sub>2</sub> were excreted by that route and other I metabolites via the kidneys. Part of the urinary I was of biliary origin. Pulmonary elimination of I and CO<sub>2</sub> and urinary excretion of I metabolites after an intragastric dose took 3 days, whereas >60 and 80% of a small i.v. dose were excreted unchanged within 5 min and 1 h after injection, resp. Biotransformation of I gave thioglycollic acid [123-93-3] and an N-acetyl-S-cysteinyl-acetyl deriv. as major urinary metabolites together with substantial amts. of chloroacetic acid [79-11-8], dithioglycollic acid [505-73-7], and thioglycollic acid [68-11-1]. It is probable that chloroacetic acid, which is a I metabolite per se, lies on a main metabolic pathway for I, since it affords several metabolites in common with I. Electrolysis of 1 mol. proportion of the

thiodiglycollate metabolite from I or chloroacetic acid gave 1 equiv. of CO<sub>2</sub>; this evidence is consistent with the transformation of I into chloroacetic acid by a mechanism involving the migration of one Cl. atom and the loss of the other one. CO<sub>2</sub> may be produced through the action of epoxide hydratase on 1,1-dichloroethylene oxide or by a minor oxidative pathway for chloroacetic acid. The N-acetyl-S-cysteinyl-acetyl deriv. is probably formed via the reaction of 1,1-dichloroethylene oxide and glutathione S-epoxide transferase.

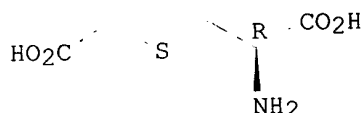
IT 638-23-3

RL: FORM (Formation, nonpreparative)  
(formation of, in vinylidene chloride metab.)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 74 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1976:414144 HCAPLUS

DOCUMENT NUMBER: 85:14144

TITLE: Soluble organic compounds containing sulfur

PATENT ASSIGNEE(S): Societe d'Etudes et Applications Chimiques, Fr.

SOURCE: Belg., 11 pp.

CODEN: BEXXAL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 827639	A1	19750731	BE 1975-155156	19750407
FR 2284319	A1	19760409	FR 1974-30693	19740910
ES 438100	A1	19770116	ES 1975-438100	19750531
NL 7508113	A	19760312	NL 1975-8113	19750708
NL 162361	B	19791217		
NL 162361	C	19800516		
GB 1501138	A	19780215	GB 1975-28961	19750709
CH 602735	A	19780731	CH 1975-9519	19750721
JP 51054590	A2	19760513	JP 1975-107947	19750905
DE 2539863	A1	19760318	DE 1975-2539863	19750908
			FR 1974-30693	19740910

PRIORITY APPLN. INFO.:

AB Five double salts consisting of a 7-theophylline acetic acid deriv., ethylenediamine [107-15-3], and a mercaptoamino acid were effective as respiratory agents. Thus, these salts inhibited histamine-induced broncho spasms, respiratory depression from either morphine or barbiturates, and caused a regression of mucopurulent obstructions from SO<sub>2</sub> inhalation. These salts were prepared from solns. contg. equimolar portions of the starting compds.

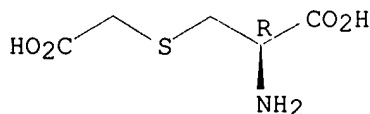
IT 638-23-3

RL: RCT (Reactant)  
(reaction of, with ethylenediamine and theophylline acetic acid)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 75 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:453126 HCAPLUS

DOCUMENT NUMBER: 83:53126

TITLE: Bronchopulmonary uptake of sulfur from carboxymethylcysteine-35S and cysteine-35S in normal rats and rats exposed to sulfur dioxide. Effects of prolonged administration of these two sulfur-containing molecules on bronchopulmonary lesions and on pulmonary uptake of their sulfur

AUTHOR(S): Servin, A.; Garcet, S.; Vu Ngoc Huyen

CORPORATE SOURCE: Cent. Rech., Lab. Joullie, Puteaux, Fr.

SOURCE: Bull. Physio-Pathol. Respir. (1974), 10(3), 315-29

CODEN: BPPRA6

DOCUMENT TYPE: Journal

LANGUAGE: French

AB The uptake of radioactivity by the lungs of normal rats after a single oral dose of 35S-labeled S-carboxymethylcysteine [638-23-3] was more tissue-specific than that after labeled cysteine [52-90-4], the tissue-to-plasma ratios of 35S being 2 and 1, resp. In rats with pulmonary lesions consequent to SO2 exposure (used as a model of chronic bronchitis), the tissue-to-plasma ratio of S-carboxymethylcysteine was 3 after a single dose, and 4 after a 5-week treatment (500 mg/kg/day, orally). In the latter case, an improvement in bronchial structure was obsd., esp. a decrease in mucosal goblet cell hyperplasia. This improvement was not seen in cysteine-treated animals, nor was the pulmonary specificity for cysteine altered by 5-week administration. These differences in distribution and pharmacol. activity can be partially explained by the fact that cysteine S was excreted in the urine as inorg. sulfates, whereas S-carboxymethylcysteine was excreted mainly unchanged.

IT 638-23-3

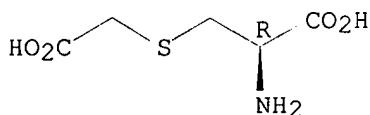
RL: BIOL (Biological study)

(bronchopulmonary damage from sulfur dioxide response to and lung metab. of)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 76 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:11333 HCAPLUS

DOCUMENT NUMBER: 82:11333

TITLE: Action of chronic administration of S-carboxymethylcysteine on pulmonary protein synthesis disturbances induced by sulfur dioxide in rats

AUTHOR(S): Garcet, S.; Servin, A.; Vu Ngoc Huyen

CORPORATE SOURCE: Cent. Rech., Lab. Joullie, Puteaux, Fr.

SOURCE: C. R. Seances Soc. Biol. Ses Fil. (1974), 168(1), 43-6

CODEN: CRSBAW

DOCUMENT TYPE: Journal

LANGUAGE: French

AB The increased protein formation obsd. in the bronchopulmonary region of rats with exptl. bronchitis induced by SO<sub>2</sub> was returned to normal by prolonged oral administration of S-carboxymethylcysteine [638-23-3] (500 mg/kg/day).

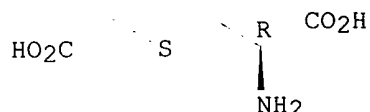
IT 638-23-3

RL: BIOL (Biological study)  
(protein formation response to, in bronchitis)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 77 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1973:52507 HCAPLUS

DOCUMENT NUMBER: 78:52507

TITLE: Tissue distribution of sulfur-35 as a function of time after oral administration of carboxymethylcysteine-35S. Autoradiography and pharmacokinetics

AUTHOR(S): Servin, A.; Garcet, S.; Vu Ngoc Huyen; Muller, P.; Cohen, Y.

CORPORATE SOURCE: Lab. Pharmacodyn., Fac. Pharm., Paris, Fr.

SOURCE: C. R. Soc. Biol. (1972), 166(4-5), 543-8

CODEN: CRSBAW

DOCUMENT TYPE: Journal

LANGUAGE: French

AB 35S-labeled S-carboxymethylcysteine [638-23-3], a drug active on the bronchial mucosa, was very rapidly absorbed after oral administration to mice and was excreted mainly by the kidneys. Autoradiog. and quant. detns. showed the 35S to have particular affinity for the lungs, which took up radioactivity more slowly (max. after 3 hr) but retained it much longer than did the other organs. The activity reached its highest abs. level in the pancreas, whereas it was practically nil in the brain and heart.

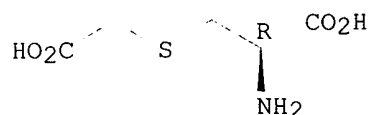
IT 638-23-3

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(metabolism of)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 78 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1971:409880 HCAPLUS

DOCUMENT NUMBER: 75:9880

TITLE: **Mucolytic** formulations containing S-(carboxymethyl)cysteine

INVENTOR(S): Joullie, Maurice; Vu-Ngoc-Huyen; Maillard, Gabriel; Lakah, Lucien; Muller, Pierre

PATENT ASSIGNEE(S): Recherches Pharmaceutiques et Scientifiques  
SOURCE: Ger. Offen., 11 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: **Patent**  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2006486	A	19710422	DE 1970-2006486	19700213
FR 2068398	A6	19710827	FR 1969-34139	19691007
FR 2068398	B2	19730112		
GB 1272881	A	19720503	GB 1970-1272881	19700213
ZA 7006363	A	19710527	ZA 1970-6363	19700917
US 3891749	A	19750624	US 1973-389325	19730817
US 29256	E	19770607	US 1976-692031	19760602
PRIORITY APPLN. INFO.:			FR 1969-34139	19691007
			US 1970-10999	19700212
			US 1973-389325	19730817

AB Formulations of the title compd. (I), optionally in admixt. with antibiotics, antihistaminics, corticosteroids, or bronchodilators, for oral administration were reported. A typical compn. of a capsule was I 50, lactose 40, silica gel 5, and Mg stearate 5 mg.

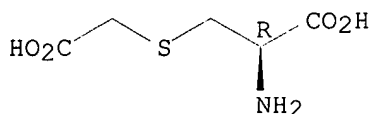
IT **638-23-3**

RL: BIOL (Biological study)  
(**mucolytic** agent)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 79 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1967:420418 HCAPLUS

DOCUMENT NUMBER: 67:20418

TITLE: Effect of mucolytic compounds on the experimental intrabronchial mucus retention in rats

AUTHOR(S): Quevauviller, Andre; Huyen-Vu-Ngoc; Garcet, Suzanne; Lakah, Lucien

CORPORATE SOURCE: Fac. Pharm., Paris, Fr.

SOURCE: Therapie (1967), 22(2), 485-93

CODEN: THERAP

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Bronchial hypersecretion was induced in female Wistar rats by exposure to SO2 for a total of 110 hrs. over a 16-day period. Some of the rats were treated orally simultaneously with S-carboxymethyl-cysteine (I) (8 g./kg./animal). Twenty-four hrs. after treatment, the rats were sacrificed and the bronchial system observed macroscopically and histol. This in vivo method for detg. mucolytic activity by measuring the retention of intrabronchial mucus in the rat gave evidence of mucolytic activity by I. I had lytic power similar to that of aerosols contg. reducing agents with SH groups.

IT **2387-59-9**

RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(mucolytic activity of)  
RN 2387-59-9 HCAPLUS

L48 ANSWER 80 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1969:9718 HCAPLUS

DOCUMENT NUMBER: 70:9718

TITLE: The nitrogen pool of animal tissues. Ox liver and bile. Ox kidney and lung

AUTHOR(S): Azumi, Tsukasa

CORPORATE SOURCE: Med. Sch., Okayama Univ., Okayama, Japan

SOURCE: Acta Med. Okayama (1967), 21(6), 321-6

CODEN: AMOKAG

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The compns. of N pools of ox liver, bladder bile, kidney, and lung were analyzed with special emphasis on the minor components, and some distinctive features of these tissues were described. S-(1,2-Dicarboxyethyl-L-cysteine and 3-(carboxymethyl)-L-cysteine were found in ox liver and kidney. Liver was low in free arginine and lysine, but high in ornithine, ethanolamine, and glutathione. Glycine was predominant only in ox bile. All amino acids were present in moderate amts. in kidney, but the glutathione content was low. The concns. of arginine and lysine were relatively high in lung.

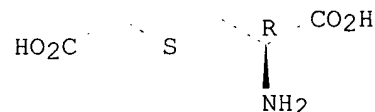
IT 638-23-3

RL: BIOL (Biological study)  
(in organs)

RN 638-23-3 HCAPLUS

CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L48 ANSWER 81 OF 81 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1967:114378 HCAPLUS

DOCUMENT NUMBER: 66:114378

TITLE: Experimental hypersecretion of bronchial mucus in the rat. II. Application to the study of S-(carboxymethyl)cysteine

AUTHOR(S): Huyen-Vu-Ngoc; Garcet, Suzanne; Lakah, Lucien

CORPORATE SOURCE: Serv. Rech., Lab. Joullie, Puteaux, Fr.

SOURCE: C. R. Seances Soc. Biol. Ses Fil. (1966), 16(10), 1849-51

CODEN: CRSBAW

DOCUMENT TYPE: Journal

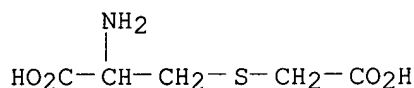
LANGUAGE: French

AB Rats were made to breathe air contg. 0.03% of SO<sub>2</sub> 2-5 hrs./day, 5 days/week, for 16 days. Half or them were given oral doses of S-(carboxymethyl)cysteine, 500 mg./kg./day, during the exptl. period. Without the drug treatment 71% of the rats exposed to SO<sub>2</sub> developed severe obstruction of the bronchi by purulent mucus but only 17% of those given the drug showed this effect. The drug apparently has considerable mucolytic activity.

IT 2387-59-9

RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(mucolytic activity of)

L49 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS  
RN 25390-17-4 REGISTRY  
CN Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Alanine, 3-[(carboxymethyl)thio]-, DL- (8CI)  
CN DL-Cysteine, S-(carboxymethyl)-  
OTHER NAMES:  
CN 5-Amino-3-thiadihexanoic acid  
CN DL-3-(Carboxymethylthio)alanine  
CN S-(Carboxymethyl)-(RS)-cysteine  
CN S-(Carboxymethyl)-DL-cysteine  
CN S-(Carboxymethyl)cysteine  
FS 3D CONCORD  
DR 2387-59-9  
MF C5 H9 N O4 S  
CI COM  
LC STN Files: ANABSTR, BEILSTEIN\*, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS,  
CASREACT, CHEMCATS, CHEMLIST, CSCHEM, IPA, MEDLINE, NIOSHTIC, RTECS\*,  
TOXCENTER, USAN, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

20 REFERENCES IN FILE CA (1967 TO DATE)  
20 REFERENCES IN FILE CAPLUS (1967 TO DATE)

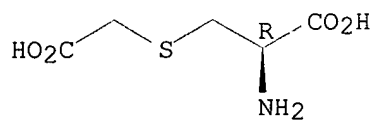
L49 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS  
RN 638-23-3 REGISTRY  
CN L-Cysteine, S-(carboxymethyl)- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Alanine, 3-[(carboxymethyl)thio]-, L- (6CI, 8CI)  
OTHER NAMES:  
CN (L)-2-Amino-3-(carboxymethylthio)propionic acid  
CN (R)-S-(Carboxymethyl)cysteine  
CN 3-[(Carboxymethyl)thio]-L-alanine  
CN Bronchokod  
CN Carbocysteine  
CN Carbocysteine  
CN DF 1794Y  
CN L-(Carboxymethyl)cysteine  
CN LJ 206  
CN Muciclar  
CN Mucodyne  
CN Mucoprone  
CN Rhinathiol  
CN Rhinathiol  
CN Rinathiol  
CN S-(Carboxymethyl)-(R)-cysteine  
CN S-(Carboxymethyl)-L-cysteine  
CN S-Carboxymethyl-L-cysteine  
CN Thiodril

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AR 2387-59-9  
FS STEREOSEARCH  
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BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN,  
CSCHEM, CSNB, DDFU, DRUGU, EMBASE, HODOC\*, IFICDB, IFIPAT, IFIUDB,  
MRCK\*, NIOSHTIC, PHAR, PHARMASEARCH, PROMT, RTECS\*, TOXCENTER, ULIDAT,  
USPATFULL, VETU  
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Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*, WHO  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

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RN 2387-59-9 HCAPLUS

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